JUL 8 1927

PAPER TRADE JOURNAL

Reg. U. S. Pat. Off.

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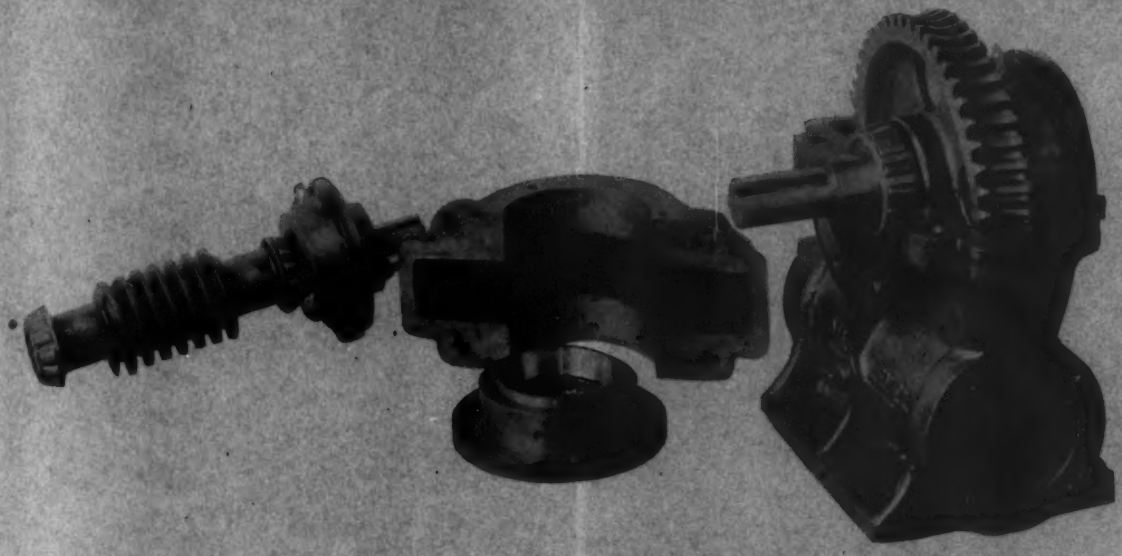

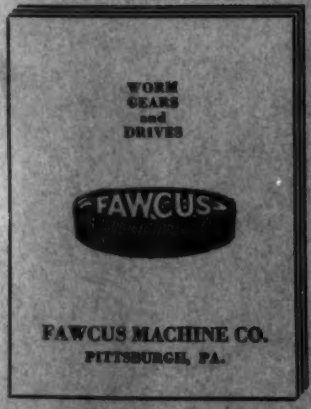

Fawcus-Timken Worm Gear Drive

Embodying all the latest improvement in design. A combination of the best materials and workmanship in the industrial field—FAWCUS GEARS AND TIMKEN BEARINGS.

A new catalogue giving dimensions, horsepower and efficiency of all standard sizes of FAWCUS-TIMKEN WORM GEAR DRIVES. Write for your copy.

Fawcus Machine Company

Pittsburgh, Pa.

REPRESENTATIVES:

NEW YORK OFFICE ..... 149 Broadway
BIRMINGHAM, ALA. ..... G. B. Mueller Co.
MILWAUKEE, WISC. ..... L. E. Meidinger
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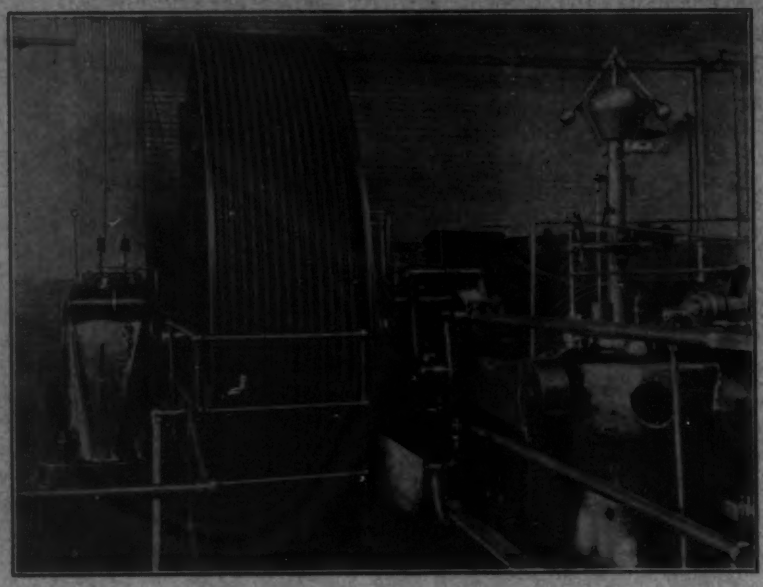


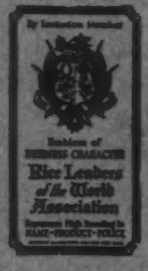
Columbian for Your Rope Drive

will assure you of steady service for many years

The ability of the Columbian Rope Company to make this Quality Transmission Rope perfect is attributed to the proper selection of fibre and the use of the latest design cordage machinery.

On the hundreds of rope drives, it has justified its reputation as a Leader many times because of its extra long, and trouble-free service.

When you next renew the rope for your drive, specify Columbian *Tape-Marked* Pure Manila Transmission Rope. You can immediately recognize it by the red and blue outer yarns and the red, white and blue *Tape-Marker*, which is found in one of the strands.



Columbian Rope Company

342-60 Genesee Street

Auburn *"The Cordage City"* N. Y.

Branches:— New York Chicago Boston New Orleans

Entered as second class matter August 15, 1925, at the Post Office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879 ■ ESTABLISHED 1872 ■ FIFTY-FIFTH YEAR ■ Published every Thursday by the Lockwood Trade Journal Co., at 34 N. Crystal St., E. Stroudsburg, Pa
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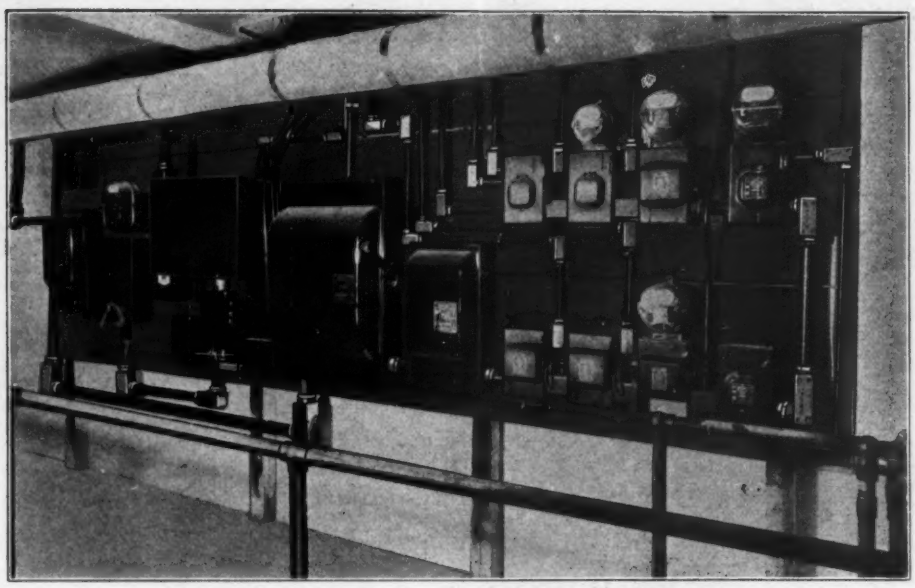

Completed in half the time that it would ordinarily take for this work.

It Isn't Luck In Business That Gets Some People Ahead

It's using the old head for what it is intended. That's why some Superintendents just cannot fail. That's why their mills remain in possession of the field. They call it good management—Mastering the overhead problems—Seeing ahead. They are saving money and labor and getting things done.

The large losses are made up of little losses. Catch the little losses—you have no large ones.

And when you do electrical conduit work you have one of the biggest little losses in your plant—unless you use KONDU.

With KONDU you do it threadlessly, saving valuable time and money, and at the same time obtaining a better job than by old methods. Eliminate waste. If you don't, it will get you sooner or later.

KONDU THREADLESS FITTINGS

Business Failures Are Caused by Insufficient Information

LEARN MORE ABOUT KONDU

Write for Catalog and Free Sample Fitting. Send coupon Today.

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CITY .....
STATE .....

P-T-J
6-27

SHORT STORIES OF EXPERIENCES IN IMPORTANT PAPER MILLS

what 4 oils accomplished in 1 mill

★ Chapter I ★

Observations and recommendations . . .

Early in 1924 a certain paper mill in New York State decided to prove for itself the economies of correct lubrication.

The mill put its lubrication problems into the hands of the Vacuum Oil Company.

A careful analysis of the equipment and operating conditions throughout the mill was made. We recommended four grades of oils. We knew from experience that these four Gargoyle lubricants would meet exactly the particular operating conditions existing.

The recommendations were agreed upon and put into effect.

★ Chapter II ★

Gargoyle Etna Heavy Medium

This oil was put in service in the following machinery: calender drive, dryer drive, press drive, white water pump, suction box pump and other important bearings.

Formerly, black oil had been used on some bearings, resulting in unclean conditions and wastage. These conditions were eliminated as soon as this Gargoyle lubricant was correctly applied. Gargoyle Etna Oil Heavy Medium was also applied to a rotary-type blower. Economical minimum feed resulted. Line-shafting bearings and electric motors were later lubricated with this same high-grade oil. Its use reduced previous labor costs for repairs and rebabbitting of bearings.

★ Chapter III ★

Gargoyle Voco Engine Oil No. 1

This oil, especially compounded for lubrication in the presence of water, was placed in service on all press bearings and wet-end bearings of the larger paper machine. Wear of press-roll bearings and consequent repairs previously caused by faulty grease lubrication, were eliminated.

Less than 2 quarts per 24 hours were required for the press rolls and other wet-end bearings.

★ Chapter IV ★

Gargoyle Valve Oil . . .

This oil was introduced as the correct steam-cylinder lubricant for the Corliss engine. Its rich lubricating qualities allowed a minimum feed which reduced oil consumption 67%, as against oil previously used.

The reports showed that the Corliss engine was effectively lubricated with one quart of Gargoyle Valve Oil for 72 hours of operation.

★ Chapter V ★

Gargoyle Crank-Case Oil . . .

This oil was applied to the dryer-roll bearings of the paper machine. A very noticeable improvement resulted. Lubrication was far more thorough than with the grease formerly in service.

★ Chapter VI ★

The savings traceable to Correct Lubrication . . .

At the end of a year's operation with these Gargoyle lubricants the mill figured its savings as follows:

Indicated savings in lubrication costs . . 38%

Savings in power charges traceable to correct lubrication 20%

Accompanying the foregoing economies were *savings in labor charges* on replaced bearings; *savings in material* used in repairs; *increased production* due to elimination of delays for repairs.

A good example to follow . . .

CORRECT lubrication, when applied throughout any paper mill, favorably affects quantity production, quality of production, and cost of manufacture.

Lubrication problems in paper mills are similar in principle, but vary in detail.

The question in every paper mill is not, "Is correct lubrication desirable?" but, "What is correct lubrication for *this* mill?" The Vacuum Oil Company is prepared to give you the reliable answer.

For many years we have been privileged to give lubrication service to the leading mills in the Paper Industry. Our specialized knowledge of correct lubrication for your industry is at your disposal.

NOTE: We will gladly send you without charge our authoritative treatises: "Pulp and Paper Mill Lubrication," and "Bottle Oilers." Write for your copies.

Vacuum Oil Company

Headquarters: 61 BROADWAY, NEW YORK

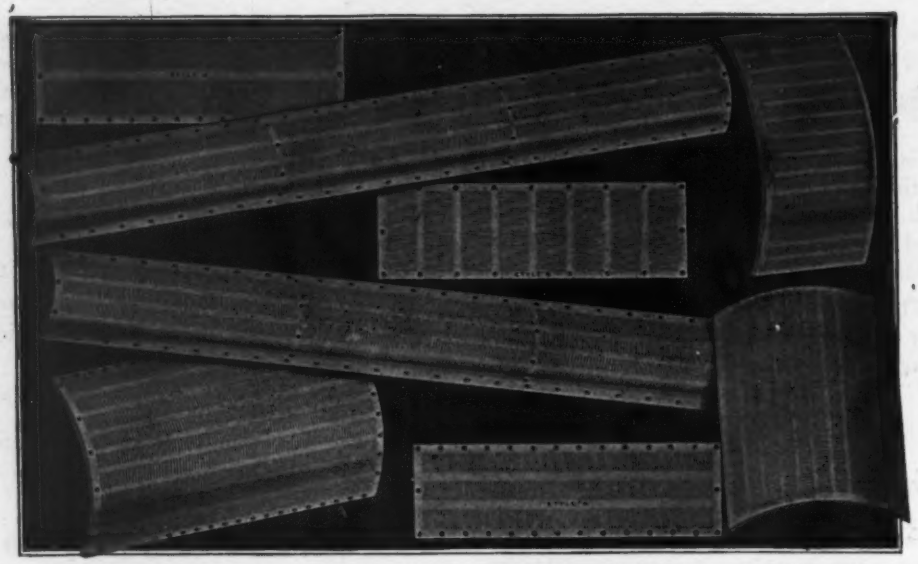
Branches and distributing warehouses throughout the country

GARGOYLE OIL

Lubricating Oils

A grade for each type of service

WILLIAM A. HARDY & SONS CO.

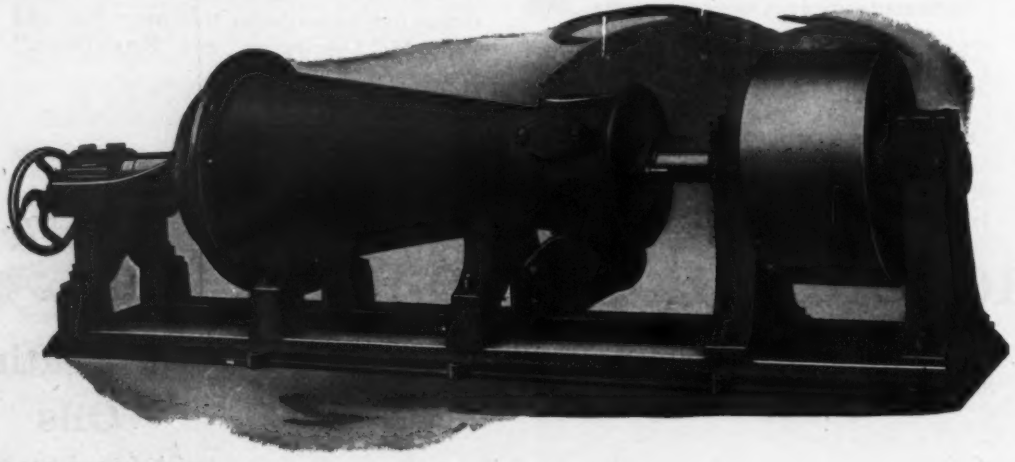


FITCHBURG, MASSACHUSETTS, U. S. A.

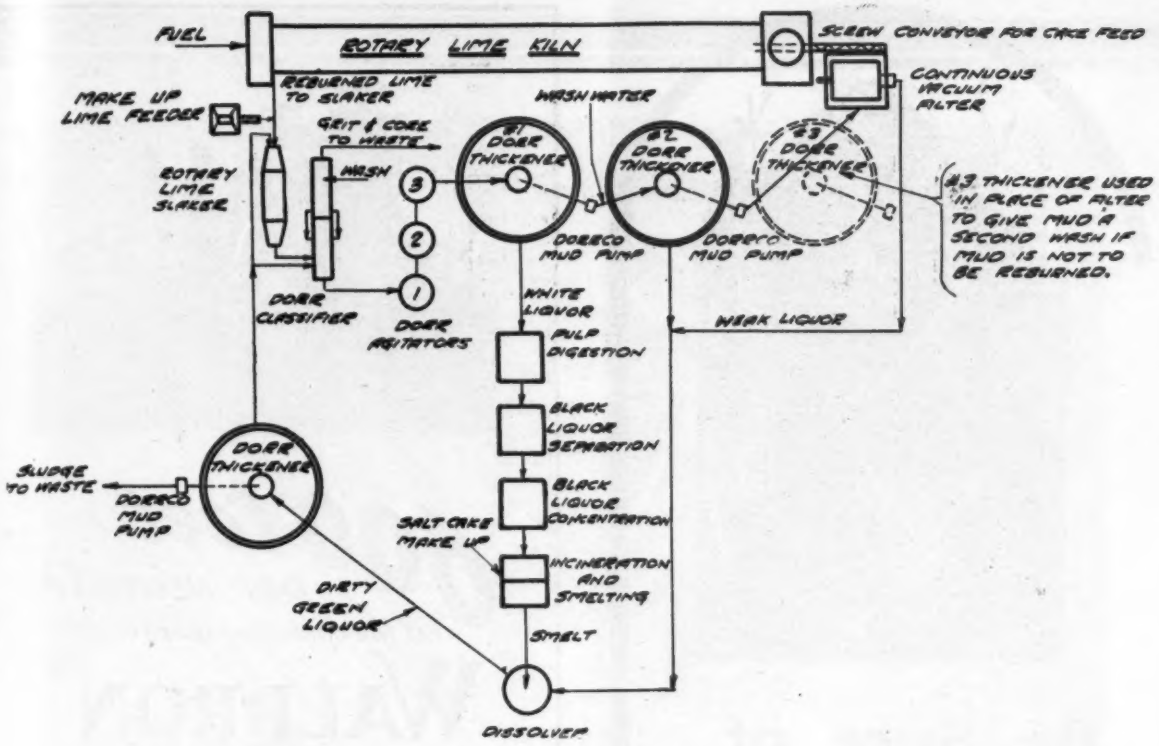
THE SMITH & WINCHESTER MFG. CO.

SOUTH WINDHAM, CONN.

PAPER MILL MACHINERY **MACHINE BUILDERS** PAPER BAG MACHINERY



NO. 60 JORDAN ENGINE



ONLY 2 POINTS OF CONTROL—

In this continuous recausticizing plant for sulphate mills.

Flexibility of operation and ease of control are features of the Dorr Continuous recausticizing system that appeal to practical paper men.

In the sulphate mill layout illustrated, two adjustments, regulated according to the amount of green liquor entering the system, control the whole operation.

1. Adjustment of wash water flowing to the last Thickener in the series.
2. Addition of make-up lime.

Results can be kept uniform, and, compared with intermittent methods, operating costs are singularly low.

With modifications to meet the particular conditions involved, the Dorr System is operating successfully in Soda Pulp Mills.

{Write for Bulletin No. 16 and special data on recausticizing in the Pulp & Paper Industry.}

DORRCO

The mark of Dorr Service

THE DORR COMPANY

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247 PARK AVENUE NEW YORK CITY

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16 South Street, London E C 2

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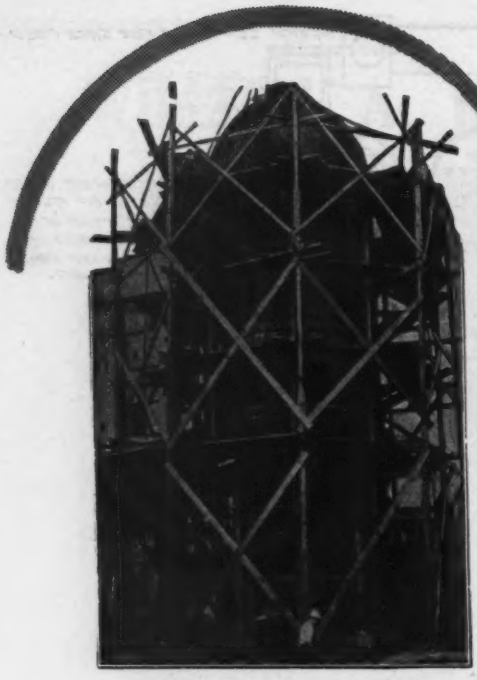
Joachimsthalerstr 10 Berlin W 15

SOC. DORR et CIE.
126 Rue de Provence Paris 8

INVESTIGATION TESTS DESIGN EQUIPMENT



Be Sure of "Construction"!

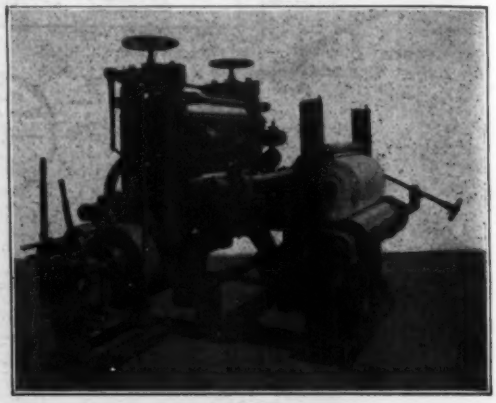
Regardless of quality of materials, strength or weight, unless the paper mill equipment is correctly assembled, it will not give you the liberal production to which you are entitled. The performance of Manitowoc Equipment in paper mills is unparalleled. Here are a few of the reasons why:

1. Only the best grade of materials are used.
2. Highest class of workmanship is maintained throughout.
3. All pieces are precision-made.
4. Heavily and durably constructed.
5. All equipment is built for longer life.

Let us tell you why Manitowoc Paper Mill Equipment will give you increased production at lowest operating costs. Write for details.

Manitowoc Engineering Works
MANITOWOC, WISCONSIN

MANITOWOC



600 feet per minute is the operating speed of this

WALDRON Embossing Machine

Even this speed is not the limit of this modern Waldron Embosser. Higher speed can be attained if the goods can stand sufficient tension. Completely solves the problem of getting goods to and away from machine fast enough.

Equipment includes large diameter steel and paper adjustable rolls, quick lifting rig, slitters and trimmers, automatic stop and double drum winder that produces hard bundle with straight sides.

Undoubtedly the latest Heavy-Duty Embosser on the market today.

Embossing Machines For All Purposes

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Write Us For Any Information Desired No Obligation

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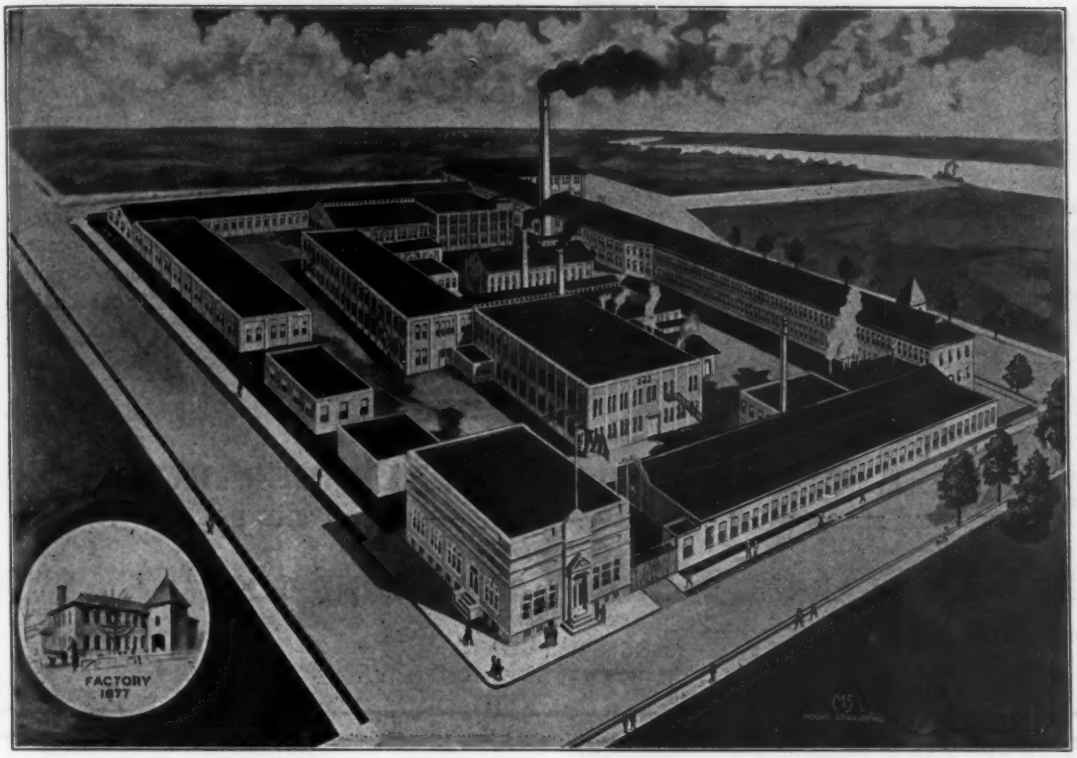
Main Office and Works - NEW BRUNSWICK N. J.

208 West Washington St., CHICAGO

30 East 42nd Street NEW YORK



This Illustration Visualizes Fifty Years of Progressive Growth and Unsurpassed Achievements in the Production of

EASTWOOD

FOURDRINIER-CYLINDER-WASHER

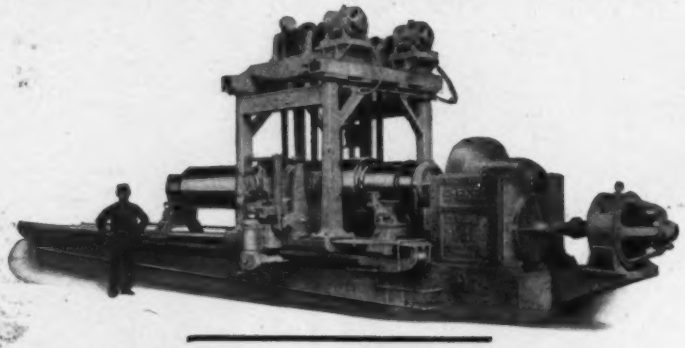
WIRES

EASTWOOD WIRE MANUFACTURING CO., BELLEVILLE N.J. U.S.A.

FARREL

FARREL NEW TYPE ROLL GRINDER

Built in 24", 32", 36" and 42" sizes. 36" grinder shown in cut.



New crowning device, geared head, automatic lubrication. Electrically driven.

FARREL CALENDERS AND CALENDER ROLLS

ARE MADE IN ALL SIZES AS LARGE AS 264" ON THE FACE.

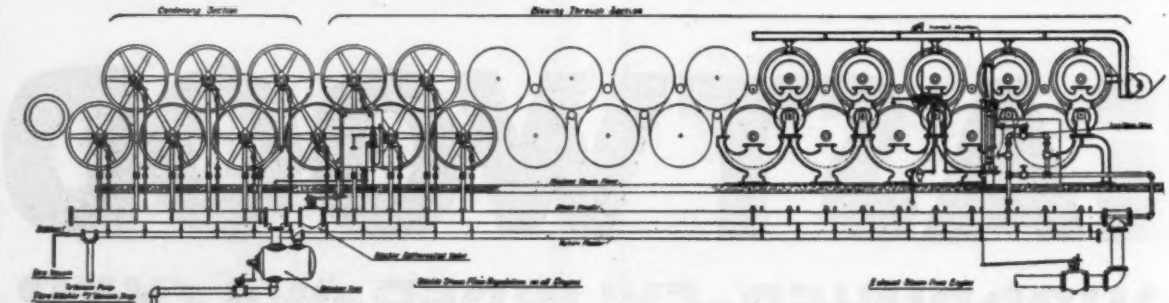
FARREL FOUNDRY & MACHINE CO.

ESTABLISHED 1848

ANSONIA, CONN.

BRANCH PLANT, BUFFALO, N. Y.

STICKLE'S SYSTEM OF DRYING PAPER



Front View Dry End of Fourdrier Showing Stickle Automatic Steam Control

Back View Wet End of Fourdrier Showing Stickle Compound Differential Rapid Circulating Drainage System

The Stickle Automatic Steam Control and Differential Rapid Circulating Drainage System will automatically maintain an evenly dried sheet at the lowest possible pressure at which a sheet of paper can be dried. The sheet will be held close to a one-half of one per cent moisture change.

Ask for Bulletin No. 18

STICKLE STEAM SPECIALTIES CO.

New York INDIANAPOLIS, IND. Boston

Better, more uniform winding, and without danger to the operators

AS you well know more or less wrinkled paper is made on the ordinary winder while getting the paper aligned.

In the Black-Clawson Uniform Speed Reel there is no necessity for alignment when changing reels. The paper always touches the large drum first and there is no variation. Both reels operate at the same speeds.

Moreover, a special construction enables the paper instantly to adjust itself to any variation in thickness or speed. The reel always lays with its full weight clear across the face of the machine.

The result—paper is wound more uniformly, and there is a tremendous saving of broke and unevenly wound paper.

But there's an even bigger reason than these savings to prompt the installation of the Black-Clawson Uniform Speed Reel. It is the absolute safety of it to the operator. It is impossible for him to get his finger, or arm caught, or even more as sometimes happens.

Why not let us lay the complete facts of this better winding before you? Under ordinary conditions the saving in broke will take care of the cost in a very short time.

THE BLACK-CLAWSON COMPANY
HAMILTON, OHIO

Established 1873.

Export offices: 15 Park Row, New York City

Builders of Highest Quality Paper & Pulp Mill Machinery. Patentees and Sole Builders of Vertical Dryers.

BLACK-CLAWSON

UNIFORM SPEED REELS

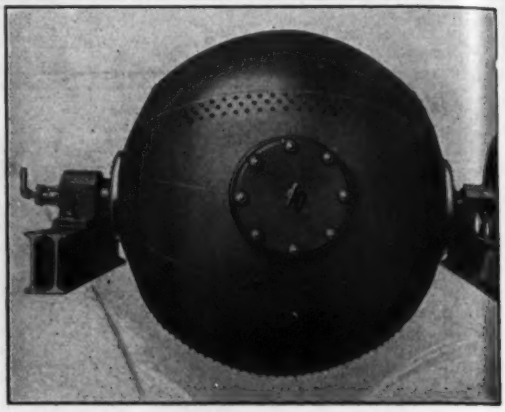
Built with Machine-Tool Accuracy

The New Biggs Handles High Densities More Quickly

THE speed, economy and all around efficiency of the modern Biggs Rotary Bleaching Engine have established a new high mark in bleaching performance.

Densities as high as 30% can now be cold bleached with uniform results and with a decided saving in both time and labor with this vastly improved bleacher.

Write today for our 40 page book **"Biggs Rotary Boilers."** Its illustrations alone will tell you more about Biggs ability and Biggs reliability than any number of words possibly could.



The New and Improved Biggs Rotary Bleaching Engine.
Patent Applied For

The Biggs Boiler Works Company
General Office and Works: AKRON 20, OHIO
Chicago Office: 35 SOUTH DEARBORN ST.
Eastern Sales Office: 300 MADISON AVENUE

The Biggs Boiler Works Co. AKRON OHIO EST. 1857

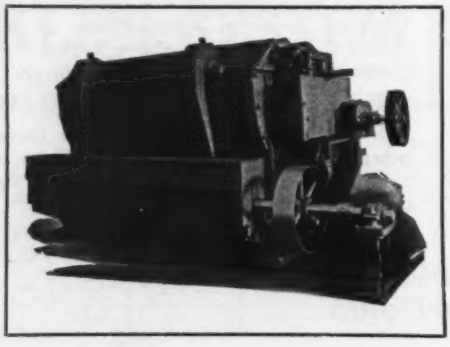
Trade Mark Registered

GLOBE and CYLINDER

ROTARY BLEACHING BOILERS

for Years of Dependable Cooking and Bleaching

1885



"MOORE & WHITE" ROTARY SCREEN

"Moore & White" Screens produce quality paper whether used on Tissues, Kraft, Roofing Manilas or Book Paper. Lumps and slime spots are eliminated. Breaks on paper are thus prevented and continuous operation is assured.

TONNAGE
CLEANLINESS
ECONOMY

THE MOORE & WHITE CO.
PHILADELPHIA, U. S. A.

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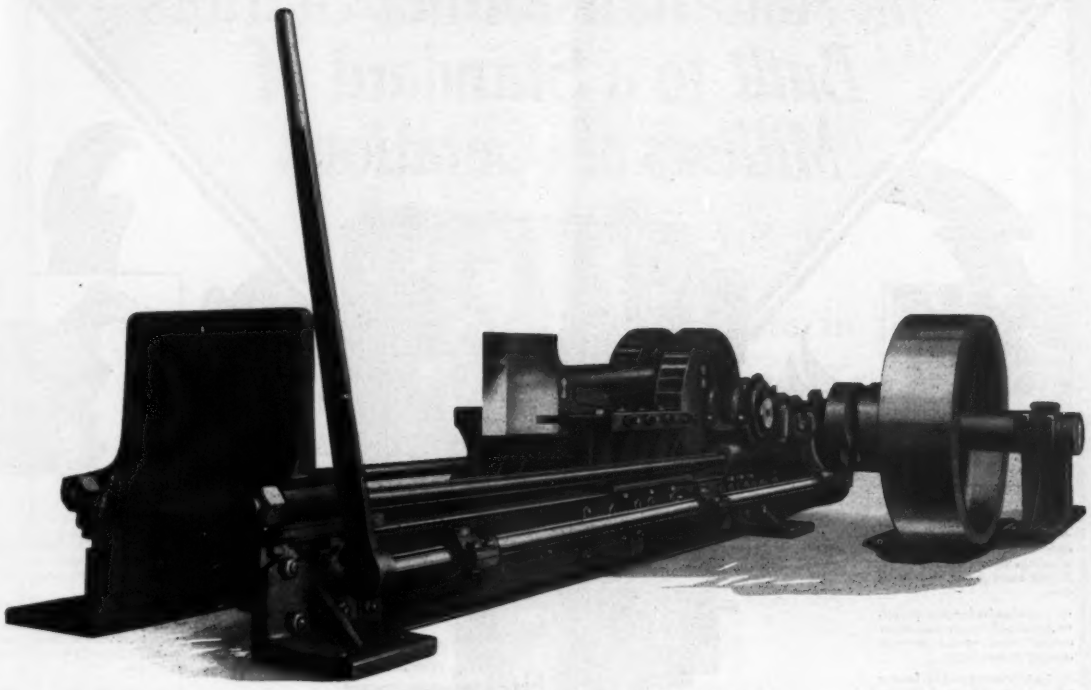
1927



The Appleton Horizontal Splitter

Production --Economy and Safety--

WHEN you split your large size pulp wood with the Appleton Horizontal Splitter you get greater production, economy of operation and complete safety for the operator.

Production—Large production is possible because the wood is conveyed to the axe and delivered mechanically. It is never lifted. The production of the Appleton Horizontal Splitter is limited only by the speed with which the operator can bring the wood to the axe.

Economy—A saving of at least one man in handling the wood is effected. The splitter is in complete control of one operator who also controls the conveyor. Mechanically it is economical in operation and upkeep.

Safety—With the slow positive movement of the axe there are no flying splinters that are responsible for most splitter accidents. The axe does not stick in the wood.

GET THIS FOLDER

THE APPLETON MACHINE COMPANY
Appleton, Wisconsin

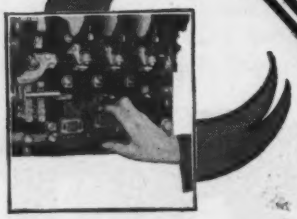
Send me your folder giving more detailed information about the Appleton Horizontal Splitter.

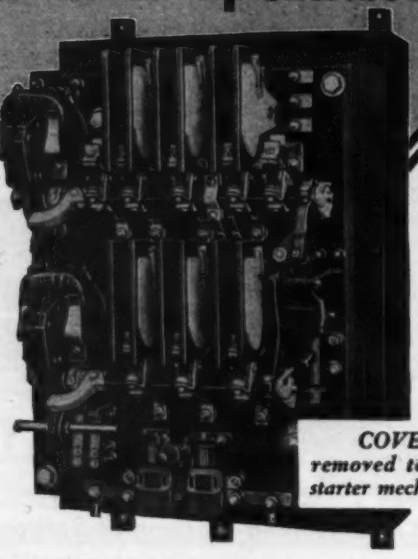
Name .....

Firm .....

Address .....

The Auto-Transformer Starters Built to a Standard of Millions of Operations





COVER removed to show starter mechanism.

1 *Thermal Overload Protection. Cuts motor from line only when heating of motor windings becomes dangerous. Easily reset from outside of case.*

2 *Overload release easily adjustable to insure maximum output from motor without danger to windings.*

3 *Interchangeable heater coils in Thermal Relays make every starter handle wide range of motor sizes.*

4 *Magnet coils easily interchanged to alter starter rating. Shading coil assures quiet, efficient operation.*

5 *Double pull solenoid type magnet. Strong, positive pull insures full roll-and-rub contact action. Cool operation of contacts and freedom from pitting provides long life.*

6 *Case designed to provide easy access to all parts of starter. Entire design such that installation or adjustment of any sort requires least possible time and effort.*

7 *Arc shields are easily removed for quick repair or replacement. The free working room thus provided makes repair of contacts simple and easy.*

8 *Chimney type arc shields and heavy blow-out coils quickly carry arc away from contacts, greatly increasing their life.*

9 *Simple, consistent and accurate timing device for unfailing dependability. Note ease of adjustment of time interval.*

10 *Hardened and ground steel bearings used for switch mechanism. Adjustable to compensate for wear through years of steady service.*

11 *Balanced panel design arranged with hole for crane hook makes handling for installation simple and easy.*

12 *Weight of starter supported by mounting strips back of case—not by case. Installation rigid and permanent.*

MILLIONS OF OPERATIONS—such starter service your plant, most likely, will never demand—but the inbuilt dependability and slow depreciation which this standard insures, mean big savings in operating and maintenance charges.

This new high standard of performance, which Cutler-Hammer engineers have made possible, is the result of a most searching analysis of squirrel-cage motor starting and operating conditions. Every feature in these new C-H Auto-Transformer Starters shows clearly the months of designing and testing which brought perfection.

Specify "Cutler-Hammer" for your very next Auto-Transformer Starter job. Check over the features. No mussy oil switches! Hardened steel switch bearings! Quick reset, adjustable, consistent timing device! New chimney type arc shields—more effective, and removable without tools! Note easy access to transformer taps to regulate starting current to 50%, 65%, or 80% of normal.

More than a dozen other features will also merit your praise, as they have wherever shown to practical men who appreciate the time and trouble thus saved in service. More detailed information gladly furnished on request.

The CUTLER-HAMMER Mfg. Co.
Pioneer Manufacturers of Electric Control Apparatus
1224 St. Paul Ave. MILWAUKEE, WIS.

CUTLER C-H HAMMER

Industrial Efficiency Depends on Electrical Control

--- *In Southern Alabama*

15,000,000 Cords of Pulp Wood

Available for Paper Manufacture in the Rapidly Developing South Alabama Territory

That is the estimated present stand of pulp wood in the rich area embracing more than 5,000 square miles in South Alabama now served by this company with hydro-electric power. Three million cords a year can be grown by natural re-seeding.

Coal and Lime Can Be Obtained From Alabama Fields

Salt Cake Can Come to Your Mill by Water

Native Born White Labor Can be Found In Abundance

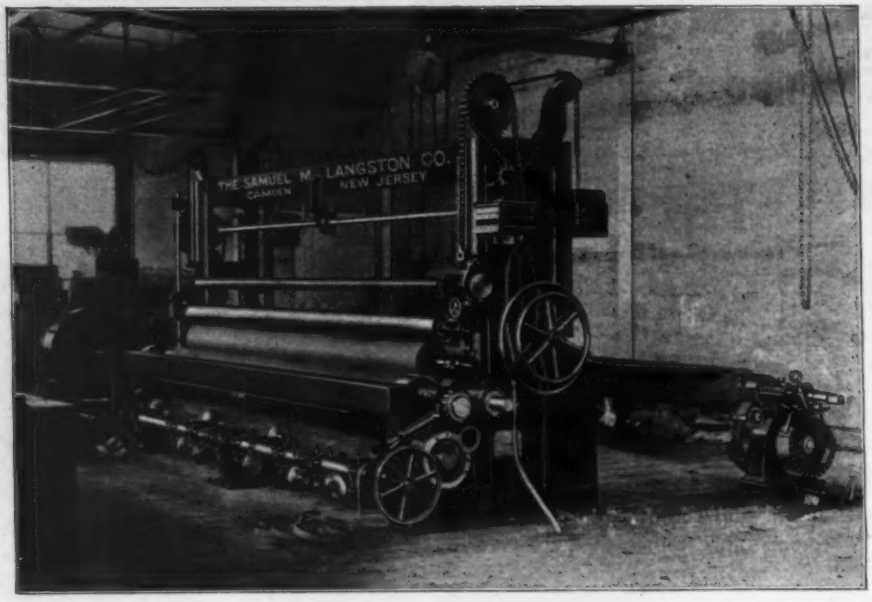
Tax Exemptions Will Be Offered by Many Counties

This virgin pulp and paper territory is worth studying. Write us what facts you'd like to have and let us make for you a careful and confidential survey. Address

NEW INDUSTRIES DIVISION

MOBILE, ALABAMA

Gulf Electric Company



160" Type "DA" Langston Rewinder in the plant of Brown Paper Mill Company, Monroe, La.

—at Brown Paper Mill Co.

Monroe, La.

RECENTLY we shipped a 165" Langston Slitter to Brown Paper Mill Company, Monroe, La., for use as a Winder at the end of their new paper machine.

This Slitter makes four Langston Slitters at work in this mill. The Brown Paper Mill Company placed their order with us for the fourth unit after an experience with our machines extending over a period of three years.

Incidentally, of these three older units, two are 160" wide. Both of them are of the same type as the machine furnished recently.

Nothing speaks for itself like a repeat order. And it is gratifying to us that so large a proportion of the Slitters we build are for mills who already use Langston machines, and buy more Langstons when they need additional equipment.

Whatever the job you have for a Slitter, whether you need a machine 165" wide, or one 30" wide, there is a Langston of a size and type that will handle your work satisfactorily.

SAMUEL M. LANGSTON COMPANY, Camden, New Jersey

Herman Goettsch, Klotzsche-Dresden, Germany

Toronto Type Foundry Co., Ltd. Toronto, Canada

T. W. & C. B. Sheridan Co., Ltd., London, E. C. 1

A. H. COX & COMPANY, INC., SEATTLE, WASHINGTON

CLEAN SHEAR CUT CUT

LANGSTON SLITTERS

PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

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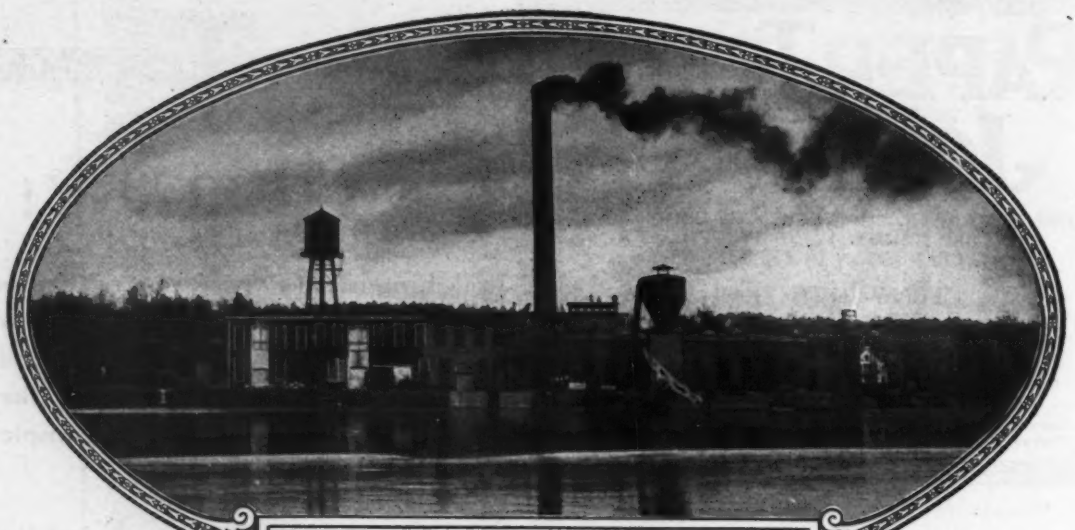

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With Which Is Combined

PAPER

The Magazine of the Paper Industry

Vol. LXXXIV, No. 26 Thursday, June 30, 1927

News Print Trend Arouses Interest in Canada

While Some Over-Production Is Conceded, President A. R. Graustein, of the International Paper Co., Considers $65 a Ton a Fair Price and Sees No Reason for Reduction—H. Biermans Doubts Whether Present Contract Rate Can Be Maintained—Another Deal By International Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., June 27, 1927.—No other single question is attracting so much interest in investment circles here as the question of the future of the news print industry. There are many who are frankly pessimistic over the rapidity with which production is expanding, especially in view of the admitted fact that existing mills have for some months past been producing at from 15 to 20 per cent below capacity. H. Biermans, who for years was prominent in the industry, as president of the Belgo Canadian Company, and who combines shrewd observation with a frankness that is at times embarrassing, recently stated that over-production would become a serious problem in the industry for the next four years. He gave statistics of immediate and prospective output in support of his contention, and intimated that it was doubtful if the present price of $65 per ton could be maintained.

During his recent visit to Montreal, the views of A. R. Graustein, president of the International Paper Company, were sought on the subject. He admitted that over-production was a fact, but was not prepared to say whether the adjustment would be a matter of one, two, or four years. He strongly emphasized, however, the view that gloomy predictions in the past had been dispelled by the remarkable capacity of the consuming market to take care of new output, saying that in 1925 there was much pessimism, and yet 1926 had proven the most profitable year in the history of the industry. He further said he saw no reason why the price of $65 a ton for news print should be reduced. It was a fair price in relation to costs, and there was no falling off in consumption. The margin of profit was small, and no more than the health of the industry required. It would not be in the interests of either producers or consumers to upset the industry by altering this price. Producers, through their organization, were in a position to control output until such time as demand caught up with capacity. Experience in the industry had shown that this might come about very quickly. At the same time, Mr. Graustein expressed the idea that it was the course of wisdom to exercise some measure of control in regard to the establishment of additional mills. Facilities for production, in his opinion, should certainly not be enlarged until there were definite prospects of the present possible output being absorbed at a fair price. In this connection he endorsed the policy of the Quebec Government in taking action to discourage new plants for the time being.

Meanwhile trade returns show that the export of pulp and paper from Canada during the month of May substantially increased. The total value was $14,154,123, an increase of $3,013,954 over the previous month. Of this $10,409,900 was represented by paper, as compared with $8,483,929 in April. For the first five months of the year the total exports of pulp and paper were valued at $68,955,132 as compared with a total of $68,179,870 in the corresponding five months of 1926, an increase for this year of $775,262. Of this $59,242,482 was represented by paper, as compared with $47,757,842 for the corresponding period of last year.

Another Deal by International Paper Co.

The Gatineau Power Company, a subsidiary of the International Paper Company, has made an offer for the purchase of the assets and undertakings of the Quebec Southern Power Corporation, and this offer has been accepted by the directors, subject to confirmation by the shareholders, at a special general meeting to be held on July 5.

As it exists today the Corporation has grown from serving 9 towns two years ago to between 45 and 50 communities at the present. In the same interval the number of customers has grown from approximately 1,000 to close to 5,000. Water power resources also have been greatly increased, those now held being estimated to have a potential capacity of about 90,000 h. p., all within 50 miles of Montreal and capable of economical development.

Its plants are situated at Mont Rolland and St. Jerome on the North River, at L'Annonciation on the Rouge River, and at Rawdon on the Ouareau River. At the latter point a new and larger plant is nearing completion.

A Race For Pulp Rights

From St. John's, Newfoundland, comes news of a race between Canadian and United States interests to obtain a foothold in the Newfoundland pulp and paper industry. A large Canadian corporation, it is stated, has notified the Government that it desired to purchase the paper mills at Corner Brook, on the west coast. The International Paper Company of New York already was negotiating for this property.

The name of the Canadian company was not divulged, but it was said that the terms offered were considerably more favorable from the point of view of the Government than those of the International. Representatives of the new bidders were said to be on their way to Newfoundland from Montreal to discuss the deal with the cabinet.

The great plant at Corner Brook was built by Newfoundland and

(*Continued on page 58*)

Marathon and Menasha Organization Merge

Consolidation of Leading Wisconsin Properties Will Prove Advantageous to Both Concerns—Don C. Everest Awarded Large Ship Model For Outstanding Personal Service to Paper Industry During Past Year—New Power Developments

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 25, 1927.—The outstanding development in Wisconsin paper mill activities during the last week is the merger of two of the larger companies, the Marathon Paper Mills Company, Rothschild, Wis., and the Menasha Printing and Carton Company, Menasha, Wis. Practically all details of the merger have been worked out, and steps are now being taken to reorganize the personnel for the purpose of administration.

This consolidation brings together two excellent properties. It enables the Menasha company to obtain a source of material and valuable water power, and the Marathon company to avail itself of a nation wide sales organization that is prominent in the paper and printing world.

The Marathon property, located not far from Wausau, is considered one of the finest in the middle west. It has four machines, one devoted to the manufacture of board, and the other three to bleached sulphite papers. The Menasha property consists of machinery and facilities for printing boxes, labels and wrappers on a large scale, with special processes for difficult color work. Containers are produced for some of the largest corporations in the United States.

No change in location of the factories or offices will be made as a result of the merger, according to G. S. Gaylord, president of the Menasha company. The Marathon mill is under the management of D. C. Everest, who is the president of the American Pulp and Paper Association.

Important Power Merger

The Wisconsin Traction, Light, Heat and Power Company, which has supplied power to the paper industry at Appleton, Wis., for many years passed out of existence this last week through its consolidation with the newly organized Wisconsin-Michigan Power Company. All of these companies are subsidiaries of the North American Company.

A. K. Ellis, vice president and manager of the Wisconsin Traction, Light, Heat and Power Company, has been made vice president and general manager of the Wisconsin-Michigan Power Company, and will operate a property valued at $16,000,000. S. B. Way of Milwaukee, is president. Principal offices will be maintained at Appleton, but there also will be a branch office at Iron Mountain, Mich.

Included in the merger are small utilities in several Wisconsin and Michigan cities. New financing plans are necessary and the new corporation therefore has issued first and refunding gold mortgage bonds to the amount of $5,000,000 at five per cent.

Chalk Hills Power Plant Operating

Electrification and beautifying are combined in the new Chalk Hills power plant recently placed in operation on the Menominee River, near Menominee, Mich., by the Northern Paper Mills, Green Bay, Wis. The power utility is known as the Northern Electric Company. The output is 10,000 hp., and the surplus current is being supplied to public utilities of Milwaukee, Wis. The power plant itself is unusual. It is built of red face brick with white stone trim. It is lighted by high Gothic windows with multi-colored borders and amber center panels. The ceiling is of straw-colored brick, while the floor is of tile to match. Ornamental iron railings surround the balcony. Massive bronze side lanterns light the building at night. On the concrete dam above the Tainter gates, is an ornamental iron railing, with boulevard lighting standards.

Progress is being made on the twin dam and power plant at White Rapids, two and a half miles further down the river. This project will be completed about September 1, and also will embody features for beauty of appearance. Lake Miscauna has been formed by the imprisoned waters of the upper dam. It is nine miles long and is bordered by summer resort property. Another body of water known as Lake Rosebush, named after Judson G. Rosebush, president of the paper and power company, will be formed by the lower dam, and likewise will be made an attractive resort. A new interstate concrete bridge will be erected, with architecture in harmony with the two power plants.

D. C. Everest Receives Wilart Award

D. C. Everest, general manager of the Marathon Paper Mills Company, was recently given the Wilart award at a meeting at Dayton, Ohio, for having given the most outstanding personal service to the paper industry for the preceding year. The Wilart meeting is composed of men prominent in the ink business, and for fifteen years has made awards of this kind. It was instituted by officials of the Oxford Miami Paper Company, and the West Carrollton Paper Company. The award itself is a large ship model in full sail. Mr. Everest thus acquires the second high honor in a year, having been elected president of the American Pulp and Paper Association.

New Paper Concern Chartered

Articles of incorporation have been filed by three Green Bay men creating a new paper concern. They are J. M. Conway, Frank T. Ramsay and Eben R. Minahan, who have formed the "Modette Company" at Green Bay, to buy and sell pulp and paper, etc. The capitalization consists of 500 shares of common stock with no par value.

Moloch Machine & Foundry Progress

For the first time since its organization, the Moloch Machine and Foundry Company, Kaukauna, Wis., has paid an earning to its stockholders. The first melon authorized by the board of directors is a dividend of seven per cent on preferred stock. This will be paid on $90,000 worth of stock owned by 150 stockholders. This company was established in 1920 and experienced a financial reorganization early this year. A fire followed which interfered somewhat with the progress. The foundry is being rebuilt rapidly with brick and steel and will be completed in less than a month. Considerable machinery has been added in the last year. Five additional machines were received at the plant several days ago and are being installed. These include three horizontal boring cars for boring cylinders, and two milling machines for gear work.

International Safety Contest Closing

When the International Safety Contest of the paper industry closes on July 1, the champions of last year, the Neenah mill of the Kimberly-Clark Company, Neenah, Wis., will be a leading contender for the victory. The mill has operated since October 6, 1925, without a lost time accident, and the workmen are exerting the utmost caution so that the record will not be marred in the few remaining days. The Badger-Globe mill of this company also was making an excellent race, but experienced an injury in January which laid up a worker for six days.

Miscellaneous Trade Notes

In a decision by a jury in circuit court at Stevens Point, Wis., the Consolidated Water Power and Paper Company was freed

from a damage suit brought by W. D. Tozier and Julia A. Tozier of that city. They contended that the flooding of a portion of their property was caused by this company's dam. The court found that no part of the land had been taken by the defendant company by flooding, and that the property had not been damaged.

External improvements costing about $5,000 are being made by the Peshtigo Paper Company, Peshtigo, Wis., in an effort to beautify the property. A storage shed has been razed, the office repainted and a new roof erected on the pulp warehouse. In addition, the grounds are being leveled and planted with grass and shrubbery. The property will become a semi-public park for use of the people of the city.

With the cessation of heavy rains in northern Wisconsin, the Wisconsin river has receded so that flood danger to the paper mills at Wisconsin Rapids, Wis., and other points has passed. Flooding of basements and washing away of protection were imminent for a time.

Added fire protection has been given the Nekoosa-Edwards Paper Company's mill at Port Edwards, Wis. The village has purchased a Seagrave pumper at a cost of $8,750. The pump has a capacity of 600 gallons and has been placed in the hands of the city fire department.

Work on the new brick smoke stack at the Kimberly, Wis., mill of the Kimberly-Clark Company has been completed. The stack was built following the addition of new boilers. It is 225 feet high, and has an outside diameter at the top of 16 feet, 9 inches. The company's name has been built into the stack horizontally by the use of light colored brick for the lettering.

An intensive campaign of safety is to be started soon among employes of the Peshtigo Paper Company, Peshtigo, Wis. A comprehensive survey of safety conditions is being made with a view of eliminating causes of accidents. This work is in charge of A. M. Dohr in the paper mill, and Jan Haugerod in the pulp mill. Heads of departments will be called to a meeting by P. M. Allen, receiver-manager, and the results of the survey will be presented.

Joseph F. Schlegel, who has been employed with the Gilbert Paper Company, Menasha, Wis., for more than forty years, has been honored for his long service. The company presented him with a gold watch.

Severe injuries were suffered by John Anderle, Menominee, Mich., an employe of the Marinette and Menominee Paper Company this week. His arm became caught between a belt and pulley while working in the woodroom, and he was wound around the pulley and thrown violently to the floor seven feet below. He suffered fractures of the left elbow, the left shoulder and pelvis.

Another serious accident occurred at the Nekoosa-Edwards Paper Company mill at Nekoosa, Wis. Martin Hobart, 38, was badly scalded on the right leg when the lid of a digester was blown off. It was found that his burns were quite severe, and almost necessitated amputation of the limb.

Rapid progress is being made on the elaborate new home of John Sensenbrenner, of the Kimberly-Clark Company, on the Lake Winnebago shore at Menasha, Wis. The walls have been completed and the super-structure now is taking shape. A sand-sucker is being used to convey sand from the lake to fill up the land. The home will be one of the most attractive in the vicinity.

Estate of William McCorkindale

SPRINGFIELD, Mass., June 27, 1927.—An inventory of the estate of the late William McCorkindale of the Parsons Paper Company filed last week at the Registry of Probate by George Ahnert, appraiser, showed an estate of $425,856. Of this $400,861 was personal property. The executors of the will are Aaron L. and John C. Bagg.

Two Fires at Champion Coated Plant

DAYTON, Ohio, June 28, 1927.—Two fires occurred at the plant of the Champion Coated Paper Company, North B. street, Hamilton, the past week. The first alarm was received at 1:30 o'clock when the mill workmen saw flames leaping skyward from the top of the rag room building, on the west side of the street. Fire had started in a small enclosure which houses dynamos used to operate a ventilating system.

The Hamilton fire chief expressed the belief that the fire started from an overheated journal box. Intensive heat caused the skylight glass to break and flames leaped through these openings. According to the chief, the fire had been burning for some time before it was discovered. The roof of the small building was entirely destroyed.

It seemed for a time that the fire would assume some proportions and workmen recalled the recent conflagration in which heavy loss to power house machinery and the building was entailed. Careful watch was kept on the rag room nearby the blaze as firemen feared sparks would set fire to that department, in which event the flames could have spread with great rapidity.

At 6:15 o'clock, the Hamilton department was called to the Champion mills for the second time on the same day, fire having broken out in a similar ventilating house, 100 feet from the place where the first fire was extinguished. A millwright discovered the second blaze before it gained great headway, and the damage, consequently, was small.

The principal loss at the first fire was caused to the dynamo. It probably will not exceed $1,500 to $2,000.

Kalamazoo Paper Co. To Install Turbine

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., June 23, 1927.—What will be the largest turbine operated by any paper mill in the Kalamazoo River Valley district, has been ordered by the Kalamazoo Paper Company and will be installed and ready for use the present year. It will mark the complete transformation of all the Kalamazoo Paper Company's power sources from steam to electricity and result in a large annual saving.

According to F. M. Hodge, president of the company, divisions 3, 4 and 5 have enjoyed electrical power equipment for some time. The new unit will take care of divisions 1 and 2, the oldest mills in the system. Mill No. 1 was purchased from the Wolverine Paper Company, while No. 2 was erected in 1902 and at the time was one of the finest two machine plants in America. Both those mills have been maintained at the highest state of efficiency and are now able to produce a much greater tonnage of paper at less cost than when originally built.

The turbine just ordered is a 4,000 k.w. General Electric unit. to make room for the structure that will house it, the large water tower and tank just at the rear of the office is to be moved to the west side of mill No. 2. The construction contract has been awarded to R. D. Boyer.

The Kalamazoo Paper Company has completed the installation in its No. 3 mill of an 82 inch supercalender, one of the largest in the valley.

Paper Box Business Dull in Cleveland

[FROM OUR REGULAR CORRESPONDENT]

CLEVELAND, Ohio, June 27, 1927.—The paper box industry here is decidedly dull and summer dullness is at least a month earlier than usual. To date there has been no warm weather and the summer resorts which order many boxes each year are not buying. What few buyers there are are observing a hand to mouth policy. There are no surplus stocks and the manufacturers believe that when buying does start it will be with a rush. All expect a good fall. Prices are a bit lower than the plants would like and collections are only fair.

Demand for Paper "Spotty" in Philadelphia

Seasonal Slackness Sets in With Advent of Warmer Weather—Some Fine Paper Grades Still Active—News Print Prices Holding Fairly Well—Request for Wrapping Paper Lighter—Summer Specialties Moving in Good Volume

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., June 27, 1927.—As might be expected, seasonal dragginess set in with the advent of summer and the paper market was listless, except for a few specialties that move in fair volume with the hotter weather, and bring a livelier business to a few of the houses distributing these lines. For the first time this season there was a tendency to break into values on converted wares by local distributors despite the firmness of the mill quotations on all grades of paper consumed in the production of these products. This was particularly true of the bag situation.

Spotty Fine Paper Trading

Except for the demand for high grade advertising specialties in the fine paper grades, the market has become a spotty affair. The better grades of book papers, covers and other advertising requirements for high class announcements and illustrated advertising matter are the most active group of fine papers. A few of the writing grades and those consumed in the manufacture of stationery are in demand for the closing of the half year inventory of business records. Christmas specialties in papeteries, greeting card stocks and other social stationery requirements are moving in smaller proportions than normally at this season. Mill quotations are holding and there are no customary seasonal offerings at lower prices, despite the duller trend of the market.

News Print Moves Slowly

While present demand for news print is not up to normal there has been no indication of what may be expected in the way of renewal of contracts among the larger publishing concerns in this city with the July month and the prospects for the remainder of the year. That prices will remain at the present levels throughout 1927 for the contracted six months to come is predicted, but there are indications, the trade believes, of lower quotations in the coming year. Mills have not been making any drastic offerings for the coming renewal of contracts anticipated with the winding up of the present month's supply and the termination of the first half of 1927 under terms of volume shipments. Prices are holding fairly well on sheet news print converted from reclaimed stocks.

Seasonal Market For Coarse Grades

While hot weather specialties are the most active of the coarse grades, there is a gradually lessening demand for wrappings and other paper goods. As the mills hold steadily to the values of the past six months there has been a tendency on the part of the distributors to bid below current manufacturers' quotations in order to make space for the inventory of goods on hand. Tissues are firmly held to the prices made by the mills for the spring months, but jobbers are making concessions in order to move goods. Building papers are not in the demand anticipated with the open weather and the prospects for broader construction operations that were forecasted several months ago. Krafts are steady but moving slower. Board mills are operating on a half weekly schedule in most of the local territory, with no changes in values.

Webster Joins Ross Engineering Corp.

Following a long association with the Dill and Collins Company, paper manufacturers, as assistant production engineer, William P. Webster has severed his connection with the local mills to become associated with the J. O. Ross Engineering Corporation, with main offices at 30 E. 42nd street, New York. As an associate of the Ross Corporation he will be engaged in the sales of the Wagner furnaces to pulp mills. As a specialist in paper making engineering and the valuable experience gained as assistant production engineer with the Dill and Collins Company, the new sales representative of the Ross Corporation is in a position to render expert services to the pulp mills in the matter of installation of proper drying, heating and ventilating equipment such as the Ross System provides. Within recent months Mr. Webster was selected by the Pennsylvania State paper manufacturers to represent the Philadelphia paper mills in the hearing held before the State Legislature at Harrisburg on the proposed bill which was introduced this winter by the Isaak Walton League to place a heavy fine and imprisonment sentence on mill owners and members of corporations controlling manufacturing concerns whose waste polluted streams. Shortly after the hearing of the paper mill representatives and those of other industries the bill was placed in the hands of the Legislative Investigation Committee. It is expected that another bill will be introduced by the League at the next meeting of the State Legislature two years hence.

Dill & Collins New Lines

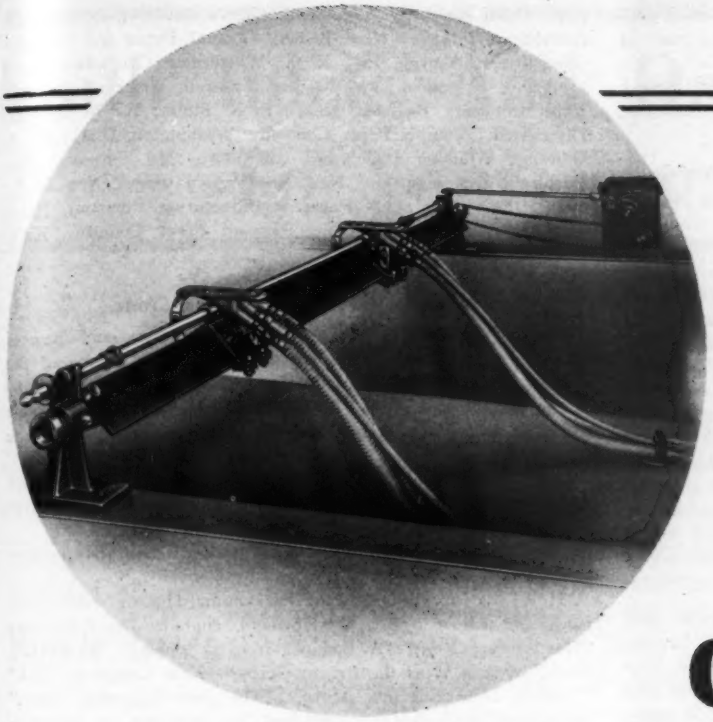
There has just been distributed to paper dealers and consumers of the Dill and Collins Company fine papers, samples of the newest shades of cover papers that have been added to the brands produced under the manufacturers' own products. With a list of distributors extending from coast to coast, the Dill and Collins Company has within the past ten days circulated these new samples to all parts of the nation. The new colors are an attractive shade of gray in the Canterbury Covers; a modish hue in Mohawk Brown in the Ben Day Brand; and two beautiful tints of an up to date type in the Duchess Covers, marked Nileen Green and Coraline. In the brief time that the new covers have been announced there have already been many orders for immediate shipment to the paper houses carrying the Dill and Collins papers. President Grellett Collins, of the company, is now on the Pacific Coast and will remain there until mid July when he returns to the Philadelphia headquarters.

Champion Container Developments

Following the acquisition of larger manufacturing quarters, the Champion Container Company, Water and Morris streets, has provided for the increase of production of its line of paper cores, tubes and fiber drums. The new plant is located on the Belt Line of the Pennsylvania Railroad and has ample siding for the shipment of carload lots of its products. Those who now control the company are President Gordon Smith and Vice President and Treasurer George T. Hyhes.

German Paper Distributors Visit Local Trade

In a specially conducted tour of the United States under direction of the American Express Company, a group of German paper distributors and manufacturers spent several days in making the rounds of the paper consuming trades of the Quaker City and Atlantic City. The group of Teutonic paper men comprises the membership of the German Manufacturers of Paper Goods Association and was headed by Dr. L. Feldger, of Berlin. While in this city they made the Benjamin Franklin Hotel their headquarters. In making the rounds of the printers, converters, and other paper consuming industries, including newspaper plants, the Germanic associates expressed surprise at the common usage to which high grade papers were put, stating that in their native land only the cheaper makes were freely devoted to ordinary products. They were impressed with the vast number of sources for the consumption of paper in America and the employment of the higher grades in the average public use of paper. While Dr. Feldger stated that Germany produced just as high quality of paper, it had not yet ac-



The Vickery Felt Conditioner

A mill that has six says —

"....Regarding the operation of the Vickery Felt Conditioner, under actual service conditions, we have installed felt conditioners on six of our paper machines. We first installed a conditioner on one machine and the results were so satisfactory, that we felt warranted in equipping five more machines.

"We have the conditioners on first felts only. They have been a great help to us in keeping the felts clean, and have saved us considerable lost time due to the fact that we do not have to shut down to wash up the felts. Furthermore, the fact that the felts are kept clean all the time saves some loss of production which we formerly experienced, especially on light weight papers."

Take one and try it out. See what it will do for you.

BIRD MACHINERY

1025

BIRD MACHINE COMPANY

SOUTH WALPOLE -:- MASSACHUSETTS

quired the common use of these owing to the fact that most consumers could not afford to pay for the more expensive lines of native production.

In the group of German associates were the following: Messrs. Ruhfus, Walker, Warnecke, Hom, Hugo, Kenthe, Rein, Fritzsche, Nikolaus, and John Falkenberg, conductor.

Dealers Add New Product of Detroit Sulphite Fibre Co.

Philadelphia dealers who were introduced to the newest of products to be manufactured by the Detroit Sulphite Fibre Company, a few weeks ago, when T. H. Donlan, of the sales staff, visited the local trade are now stocking the grade of white machine glazed wrapping. While the new product is adapted to wrapping purposes, it can also be used for wax converting. The price of the new line is adjusted to meet the grades manufactured in the local territory. Inclusive of the charges covered by the long distance haul, the value of the new product has been leveled to meet the competition of nearby manufacturers. Having established a nation wide reputation as manufacturers of high grade wrapping during the two score years that it has been engaged in paper making, the Detroit Sulphite Fibre Company has developed in its Detroit, Mich, mills, the new glazed wrapping on a parity of quality with its other long marketed brands. Representative Donlan made a complete circuit of the Eastern States before returning to the Detroit headquarters.

Paper Trade Golfers in Tournament

In point of attendance the Philadelphia Paper Trade Golf Tournament held in the passing week is memorable for the largest representation of members of the paper industry ever assembled in the sporting annals of the association. With fifty trade associates joining in the 1927 Tournament last Wednesday and Thursday, the two day schedule brought together in the camaraderie of good sportsmanship paper men from all parts of the country, representing all the branches of the manufacturing and distribution divisions of the trade. While the achievements of the members on the links of the Manufacturers' Country Club, at Orland, Pa., created the most lively enthusiasm of the program, there was a social gathering around the banquet board on Wednesday evening at the Club House that included an address of welcome by Toastmaster Arthur B. Sherrill, chairman of the Entertainment Committee and member of the firm of Riegel & Co., that gave hearty expression to the gladness of the local paper men in the splendid representation of out of town associates indicating the amity and good will of the trade with the Quaker City industry.

While the Wednesday schedule called for the teaming of eights in the qualifying rounds and the grouping of players in the morning, the afternoon was given over to match play in classes, for the consolation prizes. In Thursday's play the Kickers Handicap was won by W. W. Seary, of the D. L. Ward Company, Philadelphia, while W. H. Anders, of the Perkins Goodwin Company, New York, won in the low net score, and Roger Taft, of the Hammermill Paper Company, in close competition with Edwin A. Weihenmayer, of the Jessup and Moore Company, Philadelphia, captured the First Eight trophy, with Mr. Weihenmayer, making the Runner Up prize at the 18th hole. Eugene W. Fry, president of the Jessup and Moore Company, was winner of the Defeated Four in the First Eight. Others who were given awards for their achievements in the 1927 Tournament were:—First Eights; second, Frank Taylor, Taylor Logan Company, Holyoke, Mass.; third, Kendall Wyman, Fallulah Paper Company, New York; fourth, S. L. Willson, American Writing Paper Company. Defeated Fours of the First Eight: second, Oswald Marquardt, Marquardt, Blake and Decker, New York; third, Ross Cauthorne, Cauthorne Paper Company, Richmond, Va.; fourth, Charles Labor, Philadelphia branch Champion Coated Paper Company.

The honored guests at the banquet on Wednesday was President John Fisler, of the Pennsylvania Manufacturers' Association. Other paper men from out of town attending were: Kirby Atterbury, Holyoke; Neill Brown, General Paper and Cordage Company, Pittsburgh, Pa.; R. A. Winchester, Cauthorne Paper Company, Richmond, Va.; George Cadwell, American Writing Paper Company, Holyoke, Mass.; R. N. Finlay, W. W. Langtry, District of Columbia Paper Company, Washington, D. C.; W. B. Gillespie, Whitaker Paper Co., Baltimore, Md.; Fred Leahy, Eastern Paper Mfg. Co., New York; A. J. Pagel, New York; Walter Perry, Chemical Paper Manufacturing Company, Holyoke, Mass., and P. C. Servass, Bryant Paper Company, Kalamazoo, Mich.

News of the Boston Paper Trade

BOSTON, Mass., June 27, 1927.—The A. Storrs and Bement Company is sending to those on a preferred list a copy of the Della Robbia Paper Sample Book. This book was designed by O. W. Jaquish and printed by William Edwin Rudge. The same Company has added to its lines the Indian Head Covers, made by Knowlton Bros.

Willard Loud, assistant manager of Stimpson & Co., is at his office again, after being confined to the house for about three weeks by a severe attack of bronchitis.

Vacations of members of the office staffs of paper houses here began this week.

"How" for June, issued by the Tileston and Hollingsworth Company, and edited by A. V. Howland, contains the following: "The Squeeze Play," "A Bouquet from a Jobber," "It Has Its Place," "Smith Wins the Brown Derby," "New Lamps for Old," "Another New England Acorn," "The June Calendar Sheet," "Knocking—A Sucker's Game," and "A Definition of Advertising." With "How" is enclosed "Richard's Bulletin," a folder in regard to Milton Cover papers.

Tacoma Plans $500,000 Pulp Mill

TACOMA, Wash., June 24, 1927.—It is now announced that work on the new Northwest Pulp and Paper Company's pulp factory will be started in the next few days. This new concern will be identified with the lumbering operations of the John Buffelin Lumber Company, which is one of the largest logging and milling companies in the West. While the principal raw material for the pulp mill will be the waste from the mills of the lumber company, they also have considerable hemlock timber to draw from in the event the waste from the mills is not sufficient.

"The plant of the Northwest Pulp and Paper Company will have an initial 50-ton daily capacity, with plans made to double this production should the future outlook justify it," states Mr. Buffelin. "The cost wil be in the neighborhood of $500,000 and will occupy a five acre site which is a part of a sixty acre plot of land on Hylebos waterway, owned by the Buffelin Lumber & Manufacturing Company. It will be an addition to the already large group of manufactories that Mr. Buffelin has built in that section of Tacoma's industrial area.

Advance Bag Co. To Have Largest Kraft Machine

WILMINGTON, Del., June 27, 1927.—The largest machine in the world for the manufacture of kraft paper is now under construction at the Wilmington plant of the Pusey & Jones Company. It will be finished in six months. Announcement to this effect was made last week by the Chamber of Commerce.

It is being built for the Southern Advance Bag and Paper Company, a subsidiary of the Advance Bag and Paper Company of Boston, Mass., and Howland, Me. The new machine is for a plant now under construction at Hodge, La. This concern is one of the largest manufacturers of paper bags in the country.

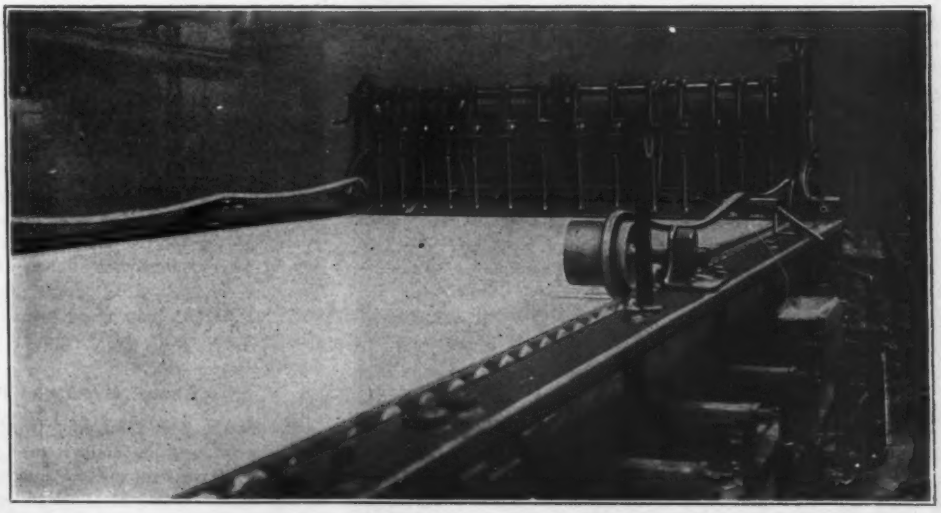
The machine will make a sheet of paper 220 inches wide. When completed it will be 260 feet long and will weigh 1,500 tons. The capacity of the machine will be 100 tons of kraft paper every 24 hours.

Voith Inlets Add Days of Service To Your Fourdrinier Wires

A large expense is encountered in frequent replacement of Fourdrinier wires and it is chiefly through the necessity for decreased costs that much study has been made of the causes for rapid and undue deterioration of costly wires. Among the preventable causes for wire wear is the friction produced by the old-fashioned slices and the long apron.

Invest in a Voith Inlet

The Voith Inlet effects new savings on former wire expense, because the wire does not have to support any excess weight of water and stock. The absence of this weight and the long apron with its heavy drag on the wire materially lengthens wire life. Users are realizing 15% to 25% longer life from their wires. A booklet giving full information regarding all the advantages of the Voith Inlet will be sent on request.



VALLEY IRON WORKS CO.

APPLETON, WISCONSIN

New York Office: 350 Madison Avenue

Western Mfg. & Sales Div., Smith & Valley I. W. Co., Portland, Oregon

Toronto Paper Trade Affected by Cool Weather

Distributors Report Light Demand for All Grades, But Mills Generally Continue Active — Business During June Fell Below Expectations and Was Highly Competitive—Construction of News Print Mill at Fort William to Begin Shortly

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., June 27, 1927.—Paper mills busy and jobbers quiet is the report heard on all sides in the trade. June has not measured up to expectations in volume with the wholesalers and just why it is difficult to say. The cool, rainy weather no doubt interfered with business to some extent and all lines of activity were affected. An effort is being made during the last few days to round out a better month than a year ago, but it is a difficult problem.

The results for the first six months of 1927 are, however, ahead in turn-over of the corresponding period of last year. What business is going now is highly competitive. The Canadian exhibitions in various centers, which are always attended by a large number of persons, will come off during the next two months and these big fairs always mean added activity for the printers and the paper houses. In connection with the Jubilee of Confederation, several firms are sending out literature urging that it should be a "Printed-in-Canada" year. It is pointed out that annually exhibitors have distributed tons of printed matter bearing a foreign imprint and the fact is set forth that exhibitors have developed the habit of deferring their printing orders until the last possible moment. It is declared that, to ensure a good job, a reasonable amount of time is necessary and that orders for paper should be placed early in order to push up the summer slump.

Erection of Great Lakes Mill

E. W. Backus, head of the Great Lakes Paper Company, was in Fort William lately, accompanied by J. T. McLellan, general manager of construction. Mr. Backus conferred with the civic authorities and announced that work on the new news print mill will begin at once. Mr. McLellan will spend a considerable portion of his time in Fort William until the mill is completed. The ultimate size of the paper plant will be as great as the Ontario Government directs and the first building will have 250 tons' capacity. The initial unit to be put in operation next summer will have an output daily of one hundred tons. Other units will be added as the provincial authorities direct and Mr. Backus intimated that the ultimate tonnage would probably be 550 tons.

Kilgours' Hold Annual Picnic

The annual picnic of Kilgours, Ltd., paper bag and box manufacturers, Toronto, was held at Lakeside Park, Port Dalhousie, on June 25, and was largely attended. An interesting program of sports was run off. Cards with each letter of the name "Kilgours, Ltd.," were distributed about the grounds and the first one finding a complete set won a handsome prize. William A. Gillis was chairman of the picnic and Miss E. Lawler, secretary and treasurer. The proceedings, which were in every way enjoyable, terminated with a dance in the pavilion.

Advisory Forest Board Appointed

Pursuant to the Act passed at the last session of the Legislature, the Ontario Government appointed the Advisory Forestry Board of five members, whose function is to be to make recommendations to the Government with a view to the conservation and perpetuation of the province's timber resources. The appointees to the Board are: Dean Howe, of the Faculty of Forestry, Toronto University; E. J. Zavitz, Deputy Minister of Forestry, J. A. Gillies, of Braeside, a former president of the Canadian Forestry Association and the representative on the Board of the Canadian lumbermen; Benjamin Avery, of Sault Ste. Marie., chief forester of the Spanish River Pulp and Paper Company, and H. S. Schanche, of Iroquois Falls, chief forester of the Abitibi Power and Paper Company. The function of the newly-appointed Board is to carry out research work in connection with the forestry lands of the province and to study all questions in connection with the planting, growth, development, marketing and reproduction of pulpwood on the Crown lands of the province. The Board is empowered also to make recommendations concerning the terms which shall be imposed upon Crown lessees in order that exploitation of the resources conceded to them shall be consistent with a conservation policy.

Operating Mills Under Difficulties

It is said that the Kenora Paper Mills are being operated under difficulties at present, when the amount of power being used by the town of Kenora, the Maple Leaf Milling Company, and the Kenora Paper Mills is considered. At the present time the town is using 90 per cent of the peak load, or all that they require. The Maple Leaf Milling Company is reported to be receiving some 80 per cent of its ordinary requirements, while the Kenora Paper Mills are only getting 17 per cent of its customary needs. The mills are at present bringing in seven cars of ground wood pulp daily from Fort William, and this amount makes it possible to operate the two paper machines.

Big Increase in Pulp Wood Cut

During the past season a large increase was reported in the number of cords of pulp wood cut in the Port Arthur district, according to a report issued by J. H. Millway, Crown Timber Agent, Port Arthur, Ont. This report shows that 340,691 cords of pulp wood have been cut during the season of 1926-7, as compared with 281,213 cords cut in 1925-6, and 266,131 in 1924-5. Other figures give the following statistics, the first figures being those of the past season, and the second, given by way of comparison, being for the season of 1925-6: Sawlogs, 141,257 pieces, 559,701 pieces; dimension timber, 24,718 pieces, 7,401 pieces; telegraph poles, 2,130, 2,519; cedar posts, 9,261, 17,691; railway ties, 265,525, 819,262; pulp wood, 340,691 cords, 281,213 cords; cordwood, 12,000 cords, 10,000 cords; lathwood, 2,513 cords, 2,624½ cords.

Annual Meeting of Pacific Burt Co.

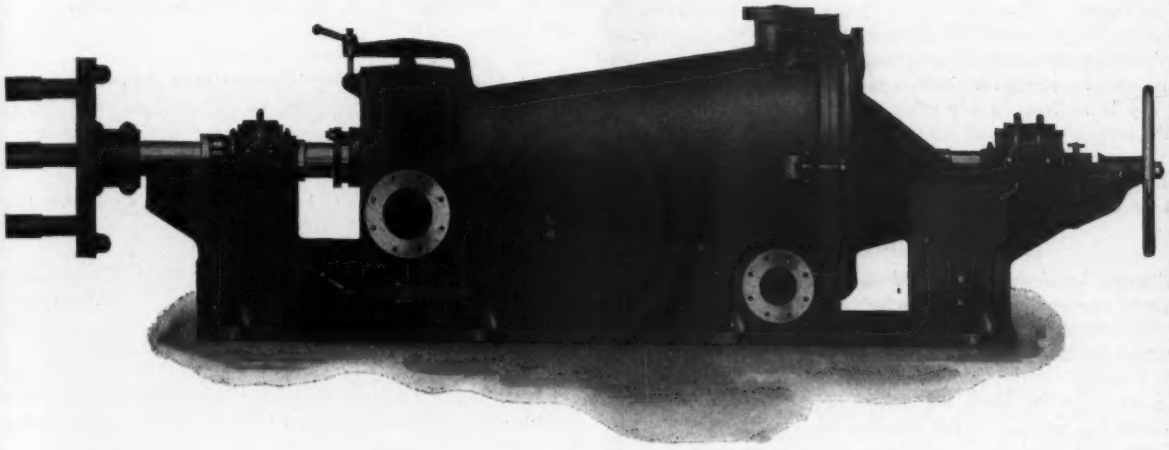
The Pacific Burt Company, of which S. J. Moore, of Toronto, is president, held its annual meeting recently. W. N. McLeod, secretary of the company, was elected a member of the Board of Directors, succeeding H. T. Scott, who retired. The shareholders were informed that the new Los Angeles plant had been opened. President Moore referred to the outlook of the company as bright. The application of the Bedeauz efficiency system will require some additional money this year but when it is perfected it is expected to result in important gains in net earnings.

Paper Box Makers Convene

F. A. Fielder, of the Fielder Paper Box Company, Ltd., Toronto, was elected president of the Canadian Paper Box Manufacturers' Association, which closed its two-day convention at the King Edward hotel lately with a dinner and dance. Other officers elected were: Vice-president, R. S. Dunlop, of the Dominion Paper Box Company, Ltd., Toronto; Directors: J. J. Small, of the Guelph Paper Box Company, Ltd., Guelph; W. E. Frankish, of the Empire Paper Box Company, Ltd., Montreal; J. L. Morency, of Quebec City, and B. Sproule, of Collett-Sproule, Ltd., Toronto. S. J. Frame, of Toronto, was re-elected secretary-

HERCULES JORDAN

NO. 3~



A Saver of Time

One-tenth the Time required to change the old style knife and wood Filler...

Grinding in of knives unnecessary

One-piece interchangeable plug and shell filler of special cast manganese steel machined and ground to size both inside and out, thereby making the grinding in of the knives with sand etc. unnecessary. Plug or shell filling of the one-piece interchangeable type can be changed in approximately one tenth the time required to change the old style, loose, individual knife and wood filler. Any other type fillers can be furnished.

Our patented clamping arrangements for clamping both plug and shell one-piece filler in place with only two bolts and clamps.

Our patented combination arrangement of changing either one-piece plug filler or one-piece shell filler without disturbing or disassembling either packing boxes, or anti-friction ball or roller bearings, thereby saving the time required to repack the packing boxes, and the time required to remount the ball or roller bearings.

Design and distribution of metal throughout such as to insure rigidity and long life with maximum production and minimum horsepower required.

Write for full particulars.

THE HERMANN MANUFACTURING COMPANY
LANCASTER, OHIO

WATEROUS LIMITED, BRANTFORD, CANADA
Canadian Representatives

treasurer. Selection of the place of the next convention was left to the Board of Directors.

Among the several addresses delivered was one by Professor H. Michell, of McMaster University, on "Manufacturing During a Period of Falling Prices." The Rev. Dr. Trevor H. Davies, of Timothy Eaton Memorial Church, addressed the delegates on "The Dawn of Prosperity." A trip was made to the Royal Canadian Yacht Club, while some of the members indulged in a golf tournament.

More Spur Lines for Paper Mills

A. Fitzgerald, chief surveyor of the Canadian National Railways, Toronto, spent a few days lately in Port Arthur, Ont., conferring with the civic authorities with respect to the removal of the company's telegraph line and other changes as affecting the north end development. Mr. Fitzgerald informed the city officials that the Canadian National is arranging facilities to provide additional spur lines to serve the two paper mills at the north end of the city in addition to any other industry that may locate there in the future. At present the company's telegraph line is located on the city road allowance, but construction of the Thunder Bay mill makes it necessary to move the line to adjoining property, and the city is arranging for this transfer.

Issue New Confederation Bag

Kilgours, Ltd., have just placed on the market a Confederation shopping bag on the front of which appears a large picture of the "Fathers of Confederation." The bag is made in honor of the sixtieth anniversary of the birth of Canada. It is of kraft paper, with a square bottom, and paper twine handles. A special machine turns out the whole bag at one operation. The firm have also added a special 7½ ton shipping tag machine which prints and cuts four tags at one operation, the printing being done in two colors.

Notes and Jottings of the Industry

Pentland Lumber Co., Renfrew, Ont., has been granted a charter with an authorized capital of $40,000, to carry on a general lumbering and timber business. Among the incorporators are Sydney P. Parsons, Egerton E. Parsons, Roderick F. Fraser and H. A. Smart, all of Renfrew.

The members of the staff of Gummed Papers, Ltd., Brampton, Ont., held their annual picnic at Erin recently, and spent a delightful day among the Caledon hills, the picnickers going as the guests of the management. An enjoyable program of games and sports was carried out, for which valuable prizes were given. The committe in charge of the picnic consisted of W. E. Scott, H. F. Battershall, A. Freeman, P. Battershall and Miss Delworthy.

Charles Allen, sales manager of the United Paper Mills, Toronto, and Mrs. Allen, who have been on a holiday trip to Vancouver and various points in the west, have returned home.

Fred W. Halls, of the Fred W. Halls Paper Company, Toronto, and family, have opened their summer cottage for the season at Pleasant Point, Sturgeon Lake.

The home of E. S. Munroe, of the Wilson, Munroe Company, wholesale paper dealers, Toronto, and treasurer of the Canadian Paper Trade Association, was destroyed by fire at Port Credit recently. The local brigade assisted by the fire reels from adjoining towns, failed to check the flames, although the furniture was saved.

Miss Anna M. R. Hawkins, daughter of H. H. Hawkins, of the city sales staff of the Canada Paper Company, Montreal, was wedded recently to Alex W. Andersen, of Boston, Mass. Mr. Andersen and bride will spend the summer at Cartierville, Que.

J. Moore, of the United Paper Mills city sales staff, Toronto, is spending his holidays at various points in Ontario.

Miss Phyllis Finlayson, daughter of the Hon. William Finlayson, Minister of Lands and Forests for Ontario, was cut about the forehead recently, and her mother, Mrs. Finlayson, was badly shaken up when the motor car which the latter was driving, was forced into a ditch a mile from Midland, Ont. Mrs. Finlayson attempted to avoid a buggy. The auto was badly smashed.

Alex. Johnson, of the Service Division of the Abitibi Power and Paper Company, left Iroquois Falls, Ont., recently for Smooth Rock Falls, where he will occupy himself with the development of a control system for the purpose of supplying information on operating data, production and quality, to mill operators and management of the Abitibi Fibre Company. He will also get together the necessary laboratory organization to carry on this work.

Letters patent were recently granted to W. H. Hough & Co., Ltd., 32 Front street, West, Toronto, with an authorized capital of $50,000, to acquire the business now conducted under the name of W. H. Hough & Co., who are well-known dealers in paper and twine.

Glazed and Fancy Committees Appointed

President R. N. Fowler of the Glazed and Fancy Paper Manufacturers Association, has appointed the following committees to report at the Association's next conference in Providence on September 27:

Statistical Classification: I. O. Van Duzer, Chairman, Louis Dejonge & Co., and J. R. Hickson, Hampden Glazed Paper and Card Company.

Revision of the Association's By-Laws: A. S. Guggenheimer, Chairman, United Manufacturing Company; C. W. Walther, Walther & Co., and H. C. Brown, Nashua Gummed and Coated Paper Company.

Revision of the Association's Trade Customs: John McLaurin, Chairman, McLaurin-Jones Company; William H. Shuart, Springfield Glazed Paper Company, and Douglas L. Swan, New England Card and Paper Company.

Development of Sales Reports: J. E. McDevitt, Blackstone Glazed Paper Company; Jesse Linton, Pawtucket Glazed Paper Company; J. M. Salomon, National Coated Paper Corporation; Harold P. Watjen, American Coated Paper Company, and O. M. Porter, Secretary, Glazed and Fancy Paper Manufacturers Association.

File Deed in Wall Paper Merger

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., June 27, 1927.—A deed was filed this week in the office of the Washington County Clerk by which the properties of the Standard Wall Paper Company were conveyed to the United Wall Paper Factories, Inc., whose principal office is listed as 927 Market street, Wilmington, Del. The filing of the deed marked the last step in the merging of the Standard Wall Paper Company, the Chicago Varnished Tile Company, the York Card and Paper Company, and the Robert Griffing Company.

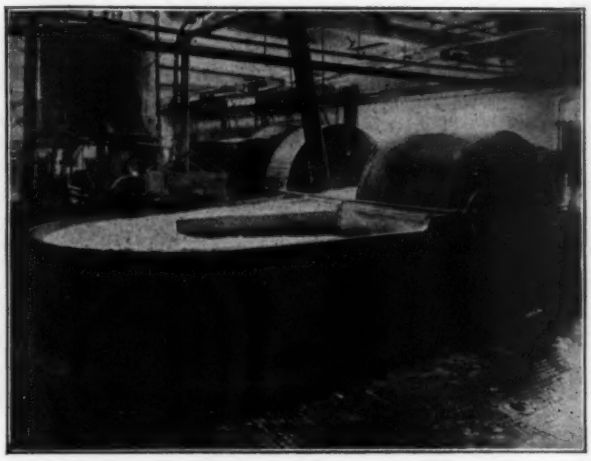
At the same time announcement was made through the Glens Falls office of Spencer Trask & Co. of an offering of $2,250,000 first mortgage twenty-year six per cent sinking fund gold bonds of the United Wall Paper Factories, Inc. The corporation is chartered under the laws of the State of Delaware. The board of directors includes Winfield A. Huppuch and Charles W. Kellogg, of Hudson Falls, Robert Griffin and Ethelbert Greene, of Jersey City, and John S. McCoy of York, Pa. Mr. Huppuch is president of the new wall paper combine.

Binders Board Cooperative Advertising

During 1926 the Binders Board Manufacturers Association carried out an intensive cooperative advertising campaign featuring the advantages of Binders Board for book binding. The mills of this association are now operating at a capacity considerably in excess of that prevailing among the mills of the paper industry in general. This is attributed in no small measure to the success of last year's advertising; so much so that the Association is continuing its cooperative advertising to publishers, book binders and librarians.

HISTORY!

"Simple facts not foolish statements."



Here is an old beater rebuilt into the Dilts approved NEW TYPE. We used customer's old roll, stands, tub ends, bedplate, bedplate box, baseplate, etc. That the results were satisfactory is evidenced by orders for *six* more rebuilt beaters and *three* new beaters.

One widely known mill on high grade papers who have recently installed ten Dilts NEW TYPE beating engines in their various plants, have had us rebuild several of their old beaters into an improved type.

The following letter from them is interesting and speaks for itself:

> "In connection with the five rebuilt beaters installed at the .... Division some few months ago: we have now had these in operation long enough to appreciate the merits of this type of beater. We are able to beat our stock much better than over the old beaters which you replaced. Also the circulation has much improved in spite of the fact that we are able to load these beaters to a greater density. We also find an improvement in the dumping which takes less time and also the stock is more uniform when it reaches the chests.
>
> "In other words, we are very well pleased with the change over."

Many mills have similar histories because many beaters are being built over to the Dilts common-sense NEW TYPE.

You should investigate the many Dilts re-building jobs and new installations. You should have the best beaters obtainable because

"Your paper is made in your beaters."

Dilts

MACHINE WORKS, Inc. FULTON, N.Y.

EXPORT OFFICE ~15 PARK ROW~ NEW YORK CITY

Obituary

John B. Taylor

John B. Taylor, of New York, formerly of Watertown, N. Y., well known to the paper making industry in both the United States and Canada, died suddenly early this month at his New York City home, following a severe cold, which had affected him for the past three weeks. Mr. Taylor's funeral was held in Watertown, his body having been brought from New York in a private car attached to one of the regular trains. Mr. Taylor left an estate of about $4,000,000, including a beautiful summer home at the Thousand Islands. Mr. Taylor's first wife was the daughter of Roswell P. Flower, who was one time governor of New York State. Although Mr. Taylor's business activities were mainly confined to power development, he was associated with the paper industry, and held certain connections with Pacific Coast companies, which are said to have been responsible for much of his wealth. In 1906, Mr. Taylor negotiated and obtained the Watertown Electric Company and the Remington Pulp and Paper Company. By 1912, Mr. Taylor controlled power development in northern New York aggregating 65,000 horsepower, which brought about the creation of the Northern New York Utilities.

Visits Rex Paper Co. by Airplane

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., June 27, 1927.—For the first time in the history of the paper industry, the airplane has been used as a method of conveyance between the paper consuming industry and the manufacturer.

Seven prominent printers of Detroit were carried, on June 23, from Detroit to the Rex Paper Company's mill in Kalamazoo, to make an inspection of the plant. The trip was engineered by the Butler Paper Company, and the Union Paper and Twine Company, both of Detroit, Rex distributors, in conjunction with the Rex Paper Company. In testing the reliability of the airplane in trips of this kind, an exact schedule was laid out a week in advance, and adhered to almost to the minute.

Those making the trip were Louis Maxon, of the Franklin Offset and Press; Herbert Wolf, manager of the Service Printing Company; John Mulford, manager, Mulford Company; Sam T. Ford, manager, Franklin Offset and Press; Harry Keyes, manager, Detroit Press; Charles Rehm, manager, John Bornman & Son; Russell Curtis, Graham Printing Company. The seven with Pilot Swanson and Mechanic Berger, composed a party of nine carried in the plane, the largest number ever carried in an airplane out of Detroit. Charles Heeter, sales manager of the Union Paper and Twine Company, and S. A. Stolberg, general manager of the Butler Paper Company, made arrangements at the Detroit end of the journey, and long before the plane left Detroit took trains for Kalamazoo, arriving at the airport just as the plane swung into sight.

The occasion was regarded in Kalamazoo as a red letter day in the history of aeronautics, and a committee from the Chamber of Commerce, composed of Secretary Earl Weber, Director William Lawrence and Director R. E. Fair met the party at the field.

In addition to the two Detroit paper house managers the party also was greeted by President Merrill B. King and Sales Manager John R. Robinson of the Rex Paper Company.

The party left the Detroit-Leland Hotel, Detroit, shortly after nine o'clock by auto for the Ford field at Dearborn, and took off from the field at 10:10. A telegram was dispatched to the Rex officials at Kalamazoo, notifying them that the party would arrive at the Kalamazoo airport at 12 o'clock. Ten minutes before the hour Pilot Swanson took his plane over the Rex Mill, made a double circle, and then headed for the airport, landing exactly in front of the camera at one minute before twelve. Coming from Detroit the party bucked a head wind and low clouds and at no time went more than 800 feet above ground.

From the field the party went to the Park Club, where they were the luncheon guests of the Rex Paper Company. For two hours in the afternoon the printers inspected the mill, every step in the manufacture of the various grades of coated papers being explained by Mr. King. Adhering to the schedule, the party left the mill at 3:30 by auto, arriving at the field a few minutes before the scheduled time of departure, four o'clock. Pilot Swanson took the air at exactly four, and during the trip to Detroit took his passengers several thousands of feet in the air. The party arrived at the Dearborn field at 5:30, and by six o'clock were back on Woodward avenue.

"We certainly are proud of our part in making paper history," said Russell Curtis, on arriving in Detroit. "For the first time in the life of the industry, a group of printers went to the source of their paper supply via airplane. We also were members of the largest party to travel by plane in this part of the country,

AIRPLANE PASSENGERS TO REX PLANT

at least. The trip was just as smoothly operated as any railroad excursion.

"Everybody thoroughly enjoyed the flight. Nobody was scared; nobody sick. We ran according to a timetable, and could pick out every city below us. The smoothness with which the plane was operated, and its great speed on little gasoline, showed us that we could have kept right on across the country if necessary. We used only one-quarter of our supply of gasoline on the trip.

"Equally interesting was the trip through the home of Rexfold, Forty-Fold, Rexcell and X-Ray papers. None of us have any doubts but what other paper mills will adopt this method of transporting their customers in the near future. The members of our party sent a letter of commendation to the Stout Air Services, the company owning the plane, immediately after the flight, congratulating the officials and pilot upon the excellent care taken of us."

Arthur Cole Made Production Manager

KALAMAZOO, Mich., June 27, 1927.—Clarence L. Harter, for several years superintendent of the Rex Paper Company, has been appointed production manager of the book mill of the Watervliet Paper Company, a position he held previous to coming to Kalamazoo. Mr. Harter's successor at the Rex is Arthur Cole, for ten years an employee of that concern and the last four years night superintendent.

Port Huron Co. Offers $300,000 Bonds

[FROM OUR REGULAR CORRESPONDENT]

DETROIT, Mich., June 25, 1927.—A $300,000 issue of 6½ per cent closed first mortgage sinking fund gold bonds is being offered by the Port Huron Sulphite and Paper Company through Detroit and Grand Rapids brokers. The bonds sell at par and accrued interest to yield 6½ per cent and are direct obligation of the company and secured by property appraised at $1,234,336.30.

¶ Before deciding on bearings send for a copy of "New Departure Ball Bearings and Their Universal Application."

¶ This book shows the practicability of ball bearings in paper-making machines as well as many other types of machinery, giving dimensions and load data together with examples of the best mounting and closure practice.

¶ It has taken our engineers many years to produce this work and it has never been bound in other than loose-leaf form, for it will never be finished.

¶ Constant research and test keep adding new facts and new reasons why the ball bearing is the ideal type of anti-friction bearing.

¶ It has cost many thousands of dollars to produce, yet your inquiry will bring you a copy without cost or obligation.

THE NEW DEPARTURE MANUFACTURING COMPANY
Detroit Bristol, Connecticut Chicago

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Harrisville, N. Y.—The Harrisville Paper Corporation, recently organized, with capital of 10,000 shares of stock, no par value, by officials of F. L. Carlisle & Co., Watertown, N. Y., operators of public utility properties, is reported to be planning the construction of a new mill in this section, or to take over existing property and expand. It is understood that the project will mature at an early date. H. E. Machold, vice-president of the Carlisle organization, will be an official of the new company. Headquarters of F. L. Carlisle & Company are at 49 Wall street, New York.

Los Angeles, Cal.—The Columbia Carbon Paper Company, Dayton, Ohio, has had plans prepared for the construction of a new factory branch and distributing warehouse at 932 Bixel street, Los Angeles, to be two-story, 46 x 50 ft. Work will soon begin. John F. Kuhns Construction Company, 175 West Thirty-seventh place, Los Angeles, is architect and builder for hte structure.

Salt Lake City, Utah—The West Paper Products Company, C. P. Castle, general manager, has acquired property at Fourth street, West and South Fifth street, as a site for a new plant for which plans will be prepared in the near future. The exact date of beginning work is still indefinite. Estimated cost has not been announced.

San Jose, Cal.—Blake, Moffit & Towne, Inc., 41 First Street, San Francisco, paper products, has engaged John D. Galloway, First National Bank Building, San Francisco, engineer, to prepare plans for a proposed branch on San Pedro street, San Jose, to be used for storage and distributing service. A portion of the structure will be reserved for office purposes. Estimates of cost will soon be made.

Cleveland, Ohio—The Ohio Boxwood Company, 1390 East 30th street, has completed plans for the construction of an extension to its plant, comprising a two-story top addition, 60 x 120 ft., reported to cost more than $75,000, with equipment. General contract will soon be let. Christian, Schwarzenberg & Gaede, Euclid Building, Cleveland, are architects. C. W. Hackett is secretary.

Philadelphia, Pa.—The Walter P. Miller Company, Inc., manufacturer of paper boxes, 452 York avenue, has completed plans for the construction of a new addition to its plant, to be located on Fifth street, near Noble street, reported to cost in excess of $45,000, with equipment. Harris & Richards, Drexel Building, are architects.

Chicago, Ill.—The Chicago Coated Board Division of the Robert Gair Company, 410 North Water street, Chicago, will soon begin the construction of a proposed new addition to its plant to be used as a machine department, reported to cost more than $75,000, with equipment. Bids on sub-contracts have been asked. Headquarters of the company are at 350 Madison avenue, New York.

Chicago, Ill.—The Triangle Hat Frame and Box Company, 120 North Green street, manufacturer of cardboard boxes, etc., has leased a floor in the building at 216-18 West Ontario street, aggregating about 5,000 sq. ft. of space, for a period of 5 years and will occupy for a new plant. It is understood that the present works will be removed to the new location and additional equipment provided for increased output.

Hudson Falls, N. Y.—Following the recent merger of the Standard Wall Paper Company, Hudson Falls; Robert Griffin Company, West Side avenue, Jersey City; York Card & Paper Company, York, Pa.; and the Chicago Varnish Tile Company, West Sixty-sixth street, Chicago, with new company to be known as the United Wall Paper Factories, Inc., a charter has been taken out under Delaware laws, with capital of $800,000, and plans are said to be projected for a general expansion program at the different mills of the consolidated organization, located at the points noted, with other factories at Schuylersville, N. Y., and Joliet, Ill. It is understood that a portion of the proceeds of a bond issue of $2,250,000, now being sold, will be diverted for this purpose, to bring about general increase in present mill production. Winfield A. Huppuch is president of the consolidated company.

Philadelphia, Pa.—Wolf Brothers, Twelfth and Callowhill streets, manufacturer of envelopes and other paper specialties, has filed plans for the construction of a proposed new four-story and basement addition at location noted, including improvements in present factory; the new building, to be 95 x 135 ft., will be of brick with architectural terra-cotta trim, metal sash, etc. A general building contract has been let to the F. D. Warren Company, 1913 Arch street. Percival M. Sax, Penfield Building, Philadelphia, is architect.

Hamilton, Ont.—The National Paper Goods Company is reported to have plans under way for the construction of a new addition ot its plant on Hess street, using site recently acquired. The project, it is said, will represent an investment of more than $85,000.

Montreal, Que.—The Canadian Pulp and Paper Association, 511 St. Catherine street, West, has arranged details for the proposed new paper and pulp building, with laboratory, etc., to be constructed at McGill University, and a general contract for the work has been let to E. G. M. Cape & Company, Ltd., New Birks Building, Montreal. The structure will cost about $250,000, with equipment.

New Companies, Etc.

Milwaukee, Wis.—The Security Paper Company, 317 Mineral street, has been incorporated with capital of $5,000, to manufacture and deal in papers and paper products. The incorporators are Maurice W. Harrison, Green Bay, Wis.; and Clyde R. Hanson and Joseph B. Nauyok, 741 Twenty-third street, both of Milwaukee.

New York, N. Y.—Frank L. Scott Company, Inc., has been incorporated with capital of $250,000, to manufacture paper toweings, tissues, paper napkins, etc. The incorporators are Samuel A. Pleasants, Philip W. Lowry and Carl L. Stronach. The company is represented by Pleasants & Lowry, 27 William street, New York.

Chicago, Ill.—The Rose Display Box Company, 111 West Washington street, has arranged for decrease in capital from $100,000 to $5,000.

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THE PUSEY AND JONES CORPORATION
Established 1848. Builders of Paper-making Machinery
[NEWS-PRINT · BOOK PAPER · KRAFT BOARD]
Wilmington, Delaware, U.S.A.

Illustrating the Puseyjones Syphon-type Steam Joint

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New York Trade Jottings

Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, has recently been appointed vice-chairman of the American Arbitration Association.

* * *

A de Chanyi, chief engineer of forestry, and member of Hungarian and American engineering societies, has been visiting his friends in the New York paper industry this week.

* * *

The New York Stock Exchange governing committee has added to the trading list, International Paper Company, $9,630,000 additional listing of cumulative 7 per cent preferred stock.

* * *

The regular weekly luncheon and meeting of the Salesmen's Association of the Paper Industry was held last Monday at the Canadian Club, New York. Due to the Holiday Season arriving, the gatherings will now be discontinued until after Labor Day.

* * *

The Corn Products Refining Company, New York, has declared an extra dividend of 25 cents on the common stock, in addition to the regular quarterly dividends of 50 cents on the common and 1¾ per cent on the preferred.

* * *

The Mid-States Gummed Paper Company, of New York, Inc., has opened offices in the new Park-Murray Building, at 9-15 Park Place, in charge of George Goodsir, vice-president and manager. The telephone number is Barclay 7292. They will handle the well known really flat gummed papers, together with green core paper and cloth gummed tapes.

* * *

S. L. Willson, president of the American Writing Paper Co., Inc., has notified holders of temporary first mortgage 6 per cent gold bonds that definitive coupon bonds of American Writing Paper Company, Inc., are now ready for delivery at the principal office of the Central Union Trust Company of New York, 80 Broadway, in exchange for the outstanding temporary bonds.

* * *

The Treasury Department has advised the Collector at New York that sheets of paper composed of straw 0.009 of an inch in thickness or over if manufactured on a Fourdrinier machine is dutiable as wrapping paper or paper not specially provided for at 30 per cent ad valorem under Paragraph 1309, Tariff Act of 1922. The present duty is 10 per cent ad valorem under Paragraph 1302. The new rate goes into effect thirty days from June 16.

* * *

At a meeting of the Board of Directors of the Manufacturers Paper Company, of New York, held June 22, Louis Bittner, the former vice-president, was elected 1st vice president, and A. C. Scrimgeour was elected 2nd vice-president. Both of these men have been with the company for many years and are well known in the paper trade. The other officers remain as formerly: Rudolf Pagenstecher, president, W. G. Kimball, treasurer, and Gustav Pagenstecher, secretary.

* * *

O. M. Porter, assistant secretary of the American Paper and Pulp Association, will attend a meeting of the Atlantic States Shippers Advisory Board's executive committee in Atlantic City on July 8. This advisory board is effectively harmonizing the interests of shippers and carriers in the Atlantic States territory. Through the Pulp and Paper Committee, of which Mr. Porter is chairman, the paper mills of this territory are assured adequate supplies of clean cars for their inbound and outbound freight shipments. The committee is also active in improving the character of railroad service through friendly cooperation with the Car Service Division of the American Railroads Association.

Chase Securities Corporation and Spencer Trask & Co., New York, are offering $2,250,000 United Wall Paper Factories, Inc., first mortgage twenty-year 6 per cent sinking fund bonds, due May 1, 1947, at 99½ and interest, to yield over 6 per cent. The corporation was formed to acquire four of the principal manufacturers of wall paper in the country with seven plants located at Jersey City; Hudson Falls, N. Y.; Schuylerville, N. Y.; York, Pa.; Joliet, Ill.; and Chicago. The companies in the consolidation are the Robert Griffin Company, the Standard Wall Paper Company, the York Card and Paper Company and the Chicago Varnished Tile Company. The bonds will be secured by a direct first mortgage on all the fixed properties of the corporation now owned or on properties hereafter acquired for which bonds under this indenture are issued.

R. S. Kellogg Begins Long Tour

R. S. Kellogg, secretary of the News Print Service Bureau, and his son, left New York on Tuesday on a long and comprehensive inspection trip, in the course of which they will visit Chicago, Kansas City, Topeka, Kan., Manhattan, Kan., Denver, Col., Salt Lake City, Utah, San Francisco, Cal., Portland, Ore., Bend, Ore., Spokane, Wash., Seattle, Wash., Vancouver, B. C., Alaska, Prince Rupert, Jasper, Winnipeg, Pine Falls, Port Arthur, Kapuskasing, Porquis Junction, Ottawa and Montreal, returning to New York about September 9. Incidentally, Mr. Kellogg and his son plan to spend from August 4 to 22 in British Columbia and Alaska.

During his tour, Mr. Kellogg is to address the Kansas State Agricultural College, Manhattan, Kan., of which he is a graduate. He has also arranged to give the International Paper Company film on Paper Making at this event. Mr. Kellogg is also to address the Advertising Club, Denver, Col.; the Lumbermen's Club, Salt Lake City, Utah; the Hoo-Hoo Club, Oakland, Cal.; the Hoo-Hoo Club, Portland, Ore.; the Advertising Club, Tacoma, Wash.; the Advertising Club, Seattle, Wash.; the Board of Trade, Vancouver, B. C.; the Hoo-Hoo Club, Winnipeg, Man.; and the Hoo-Hoo Club, Fort William, Ont.

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 29, 1927.—The Government Printing Office will receive bids on July 6 for 106,000 pounds (48,600 sheets) of various thicknesses No. 2 quality 25x30 binders board.

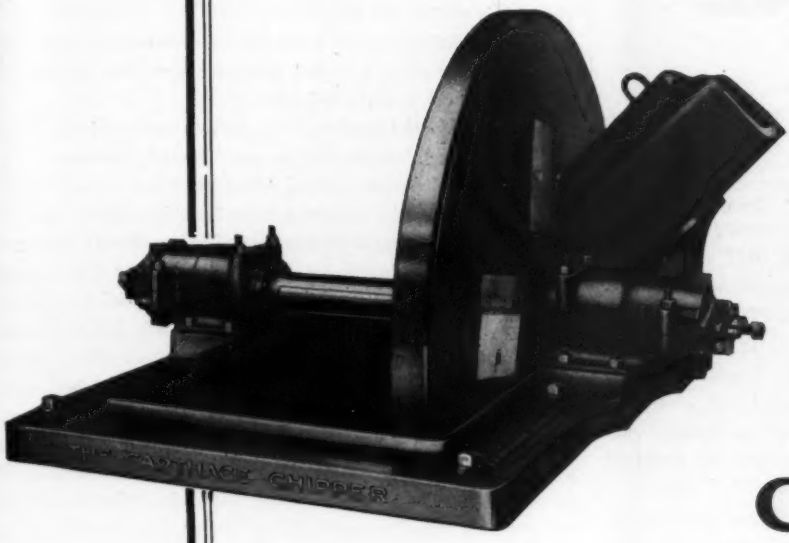
The Printing Office has received the following bids for 5,430 pounds of 22½x28½—362 lbs., white index paper: Whitaker Paper Company, at 17.27 cents per pound; R. P. Andrews Paper Company, 18 cents; Carew Manufacturing Company, 26.5 cents; Dobler & Mudge, 18 cents; Lindemeyr & Harker, 21.3 cents; Reese & Reese, 20 cents; and Old Dominion Paper Company, 18.7 cents.

The Government Printing Office has received the following bids for 100,000 3¼x1⅞ cardboard shipping tags of which half are red and the other half white: Denney Tag Company, 87 cents and 68 cents per M; Dennison Manufacturing Company, $1.12; Samuel Cupples Envelope Company, 81 cents; T. A. Cantwell & Company, 75 cents; American Tag Company, 75 cents; and Gimbel Bros., 80 cents.

Good Progress at Brompton News Print Mill

MONTREAL, June 27, 1927.—Good progress is being made in connection with the news print mill of the Brompton Pulp and Paper Company that was constructed late last year beside the groundwood pulp mill at Bromptonville. During the past week the output from this machine has been exceeding 100 tons daily. With the older mill at East Angus running well over 100 tons daily, the combined production of the two mills now exceeds 200 tons daily. Through an arrangement with the Hearst publication, the entire output is guaranteed a market.

The Chipper on roller bearings



The Carthage Chipper

The final analysis of any machine is always: will it prove a *profitable* investment? Carthage Chippers have for years been standard equipment. Now that we are building them with roller bearings they use very much less power—and power input for chipper operation is one of the very important factors.

The perfectly balanced disc, patent feed spout, adjustable bed knife and many other Carthage features which have made our chippers so popular, all contribute to your making a very profitable investment when you buy Carthage Chippers.

Ask for the name of your nearest Carthage users. You'll enjoy reading the Bulletin, too.

Carthage Machine Company

Manufacturers of Pulp and Paper Mill Machinery

Carthage, New York

Bellville, Ont., Canada

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STATISTICS AND DISTRIBUTION

Frequently, manufacturers of certain grades of paper remark that conditions which affect the paper industry in general do not affect the consumption of their particular grade or grades of paper. This may or may not be so but if it is not so, then what is it which does affect the changes in demand for that grade of paper?

It is true that current general business conditions do not affect all grades of paper in a similar manner and it seems evident that certain elements of the business structure have more direct bearing upon demand of one type as compared with other classifications.

This may be well illustrated by reclassifying the various grades of paper into four major groups from the standpoint of consumption as follows:

1. Paper for Packing and Shipping: Board, Wrapping, Bag, Tissue, etc.
2. Paper Sold as Paper: Writing, Towel, Toilet, Absorbent, etc.
3. Paper Sold for Printing: Cover, Book, News, Poster, etc.
4. Paper Used for Building: Hanging, Building Boards, Sheathing, Felts, Roofing, etc.

It is evident that building and construction are the most influential elements affecting building papers, just as it must be true that advertising affects news print and book paper, or that chain store sales affect bag consumption. To enlarge more fully upon the above would lead to one of the paper industry's most important problems at present, namely, research on distribution.

In the above classifications are papers used for every conceivable purpose. Papers used in the candy trade are largely dependent upon sales of candy; paper used in packing soaps is likewise dominated by sales of soaps; and the same situation in some similar form applies to practically every grade of paper.

The big problem, then, is not entirely to determine the tonnages consumed but rather to determine just what specific elements of the business structure finally make possible that consumption, and which elements may aid to increase it.

That brings in the distribution of the dollar—the distribution of income throughout the nation. Wages and salaries, dividends, interest, savings, building and loan accounts, etc.—all of these help determine the future trends of business and of consumption. Yet, these dollars are not evenly distributed throughout the nation—and distribution in the various districts is affected by the industries in that district which make wages, savings, etc., possible.

These industries—practically all of them—are dependent upon the income from other industries for their sustenance. The problem begins to look complicated, and it is complicated. But there are certain reasonably accurate indexes of the elements which affect the various major industries and to these can be added those elements which affect a particular grade of paper, and thus the research is well on its way.

The chief difficulty seems to be that when many concerns arrive at or near this point, they consider the job as near finished and the research not entirely satisfactory.

Depending on the product, there remain many other elements still to be solved. Some of these are: What is the per cent increase in income, in the sections where my paper is sold, as compared with changes in population, manufacturing, agriculture, etc.? What, on the average, is the business of my customers—and upon what other main industries are they dependent for their income? What can my jobber tell me about the per cent ratios of his distribution to various classifications of business? Since consumption is increasing, where is it increasing in the most stable manner so far as my customers are concerned—and what is the cause of it? What was my ratio of sales to total sales for my grade of paper? Where do sales cost me the most—and am I carrying on interminable missionary work for the benefit of my competitors with no profit to my mill? What major conditions exist today which will probably affect my sales during the coming months? These are only some suggested ideas which might be used to advantage by growing companies.

All of the foregoing requires accurate and timely statistics,—facts and figures of the past as well as of the present,—but when such facts and figures help to develop new markets, reduce inventories, and eliminate red ink,—they become more than mere statistics. Like Lindbergh's plane, they are part of the organization,— of "we."

The American Paper and Pulp Association will be in position to develop accurate and timely statistics for its members only as the mills directly or through affiliated Associations report promptly and regularly on the grades which they produce.

The industry has now developed the machinery through the Association to produce the right type of statistical reports which will help to answer some of the above questions but the machinery can run satisfactorily and at a profit only as it is supplied with raw material from the mills in the way of full reports.

CHANGE IN COMPENSATION LAW

New York State manufacturers of pulp and paper and allied lines who carry compensation insurance will benefit by an amendment to the Workmen's Compensation Law which goes into effect July 1. The amendment concerns the treatment and care of injured employees and is intended to correct abuses by which employers were made liable for medical and surgical fees in addition to the premium they paid for their insurance, according to a statement made by Industrial Commissioner James A. Hamilton.

At present an employer contracting with a physician or surgeon to attend an injured employee in accordance with the duty imposed on the employer by Section 13 of the law makes himself directly liable to the doctor. Employers have been compelled to satisfy judgments obtained by physicians for such services.

The amendment provides that in the case of medical treatment of injured employees "all fees and other charges for such treat-

ment and service, whether furnished by the employer or otherwise, shall be subject to regulation by the board as provided in section twenty-four of this chapter, and shall be limited to such charges as prevail in the same community for similar treatment of injured persons of a like standard of living."

The number of unethical physicians is relatively small yet it is large enough to warrant this change in the law, Mr. Hamilton said.

In the past the unscrupulous physician was able to charge exorbitant fees which the employer had to pay when he contracted with the physician for the care of the employee. This was because of the existence of a contract between the employer and the physician which did not specify the amount to be charged for services in the case of injured employees. The amendment gives authority for the regulation of all charges for such service whether the service is rendered at the request of the employee, the employer, or the insurance carrier.

The State Insurance Fund, which is part of the State Industrial department, has followed the law in assenting to the practice of permitting the employer to engage the service of any physician in whom he had confidence for the treatment of his injured employees. The Fund always exercises supervision over the medical care of cases. Through its own Medical Department it checks up on the treatment given injured employees. This is done to insure proper treatment and to see that the method is such as to enable the employee to return to work at the proper time.

The amendment is an improvement in the compensation law; its effect should be to end the abuse mentioned. It will have a tendency to lower the cost of compensation insurance. The policyholders in the State Insurance Fund will be interested also in the part of the amendment which affects what are known as third party cases. The third party in this connection is the outsider through whose operations the employees or another may be injured. Hitherto the employer has had no right to recover from a third party for medical expenses incurred in providing treatment for employees injured through the operation of a third party. Under the amendment effective July 1 the employer will have a cause of action against the third party to recover the amounts paid for medical treatment.

The effect of this amendment should be to lessen delay in providing treatment in these cases inasmuch as the employer will have the duty to provide medical treatment and will be able to recover the amount of the cost. The change in the law will eliminate disputes with doctors and hospitals about the proper payee for services rendered in such cases. The amendment will give the State Insurance Fund added power to act in the interests of its policyholders in asking proper recoveries in their third party cases.

To Make Paper From Sabai Grass in India

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 28, 1927.—A company in Punjab, India, has been formed to manufacture paper from sabai (bhabbar) grass, according to advices which have just been received from Consul E. Verne Richardson, Karachi, made public by the Department of Commerce.

India possesses enormous areas of possible paper pulp-yielding grasses, states the director of industries in Punjab. With economic cropping and intensive cultivation it is believed in India that paper mills can receive a continuous supply of raw material, as grass matures in a short time.

Canadian Pulp and Paper Exports Increase

According to the report issued by the Canadian Pulp and Paper Association, the exports of pulp and paper in May were valued at $14,154,123, an increase of $3,013,954 over the previous month.

Exports of wood pulp in May were valued at $3,744,223 and exports of paper at $10,409,000 compared with $2,656,240 and $8,483,929 in the month of April.

For the various grades of pulp and paper details are as follows:

	May, 1927		May, 1926	
	Tons	$	Tons	$
PULP:				
Mechanical	20,777	609,258	20,652	593,845
Sulphite bleached	17,262	1,394,825	14,407	1,133,950
Sulphite unbleached	16,025	890,440	21,451	1,224,524
Sulphate	13,765	826,142	12,756	804,366
Screenings	1,220	23,558	.....	.....
	69,049	3,744,223	69,266	3,756,685
PAPER:				
News print	149,925	9,858,854	135,251	8,870,192
Wrapping	735	83,826	1,301	153,226
Book (cwts.)	12,824	83,109	7,830	62,595
Writing (cwts.)	1,671	11,997	1,707	11,273
All other	.....	372,114	.....	289,439
		10,409,900		9,386,725

For the first five months of the year the total exports of pulp and paper were valued at $68,955,132 as compared with a total of $68,179,870 in the corresponding five months of 1926, an increase for this year of $775,262.

The total value of wood pulp exports in the first five months of the year was $17,712,650 and exports of paper $59,242,482, as compared with $20,422,028 and $47,757,842, respectively, in the corresponding five months of 1926.

Details for the various grades are as follows:

	5 months, 1927		5 months, 1926	
	Tons	$	Tons	$
PULP:				
Mechanical	76,879	2,194,991	117,250	3,405,710
Sulphite bleached	93,110	7,330,182	79,767	6,251,425
Sulphite unbleached	75,492	4,164,298	113,684	6,452,054
Sulphate	65,425	3,980,900	69,256	4,312,839
Screenings	1,944	42,279	.....	.....
	312,850	17,712,650	379,957	20,422,028
PAPER:				
News print	891,327	48,591,529	676,214	44,559,989
Wrapping	6,660	756,061	8,098	1,038,822
Book (cwts.)	30,468	229,328	20,178	175,455
Writing (cwts.)	5,222	42,821	6,709	51,247
All other	.....	9,622,743	.....	1,932,149
		59,242,482		47,757,842

Exports of pulp wood for the first five months were 678,693 cords valued at $6,341,457, compared with 497,318 cords valued at $4,564,553 for the first five months of 1926.

Paper Selling Campaign Advocated

Is the Paper Industry selling the buying public? Haven't the individual mill executives and their associated groups been so busy selling their goods that they've overlooked this new competition which necessitates industry advertising? If the public's interest and demand isn't focused on *paper* their dollars will go to the radio, fur, automobile or other industries which are advertising their products.

Adequately supported, the American Paper and Pulp Association could handle a nation-wide selling campaign which would feature and create a demand for paper and paper products and thus enable the industry to successfully compete with other domestic and foreign industries whose products now draw the public's dollars.

Raw Materials of the Paper Industry

Beginning with the June 21 issue of the Weekly Business Review published by the American Paper and Pulp Association, there is included a report on eleven basic raw materials used in the manufacture of paper. This report contains a review of the situation for these materials as regards markets during the previous week and it will be continued as a weekly section of the bulletin. In addition to the weekly summarization of the raw materials situation, the statistical division of the association is preparing complete reports on trends, stocks, etc., of these materials and these reports will be mailed to the members.

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Power Economy under Normal Operating Conditions

5" to 16" mercury is the range of suctions in at least 80% of the flat box, felt conditioner, vacuum filter, and suction roll service in paper mills. The careful manager is consequently interested in pumps that show the greatest economies under these conditions.

In this range of vacuums, most common in paper mill operation, Connersville Cycloidal Pumps use less power. Combined with their inherent simple, sturdy design, this means economy now and through many years.

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Section of the

Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

Identification Of Piping For Paper Mills

The A.S.M.E. Committee on the Identification of Piping Systems has recently completed a Scheme for the Identification of Piping Systems. This was prepared by the three sub-committees whose reports were approved by the Sectional Committee and was later developed by a special Editing Committee.

Copies of the proof sheets have been submitted to the Technical Association which has been interested in the scheme and has been represented by P. H. Glatfelter. In Technical Association Papers Series IX (1926) page 45 is published a report in which is embodied the recommendation of the Heat, Light and Power Committee giving the Suggested General Piping Code for All Paper Mills, and which has been embodied in somewhat modified form in the A.S.M.E. Scheme.

The reference to the TAPPI color code for piping follows:

STEAM	Color band	Additional color stripes
High pressure, Saturated 100 lb. and higher	orange	white
Superheated	.....	white-gray
Low pressure, Saturated 20 to 75 lb.	orange	white-black
Superheated	.....	.....
Low pressure, Saturated, Atmosphere	orange	white-green
Superheated to 20 lb.	.....	white-green
Vacuum lines, Atmosphere to 1 in. absolute	yellow	white-buff
WATER		
Fire protection	red	.....
Fresh	green	.....
Circulating	green-blue	.....
Boiler feed	green	black
Blow-off	green	brown
Make-up	green	gray
Treated	green	yellow
Filtered	green	.....
Waste or white water	green	white
Hot	green	.....
Wash	green	.....
Return condensate	green	black
Hydraulic piping: High pressure	yellow	green-red
Low pressure	green	.....
High pressure, 50 to 125 lb.	yellow	black-white
Low pressure, Atmosphere to 3 lb.	green	black-white
CLAY, ALUM, SIZE		
Alum	buff	.....
Size	brown	.....
Clay	gray	white
Color	green (light)	.....

GROUND WOOD PULP		
Grinder pressure, Water supply	green	.....
Oil supply	green	orange
Slush stock, No. 1 grade tailings	green	brown (gray flanges)
Low pressure	green	maroon (white flanges)
White water, High pressure	yellow	maroon (green flanges)
SULPHITE PULP		
Gas, lead or cast iron	orange	purple
Acid, lead and bronze	orange	purple-red
Blow-off-obvious	black	.....
Waste liquor, obvious unless reclaimed	green	purple-black
Low pressure	green	maroon (white flange)
White water, high pressure	yellow	maroon (green flanges)
Sulphite brown stock	gray	brown
Sulphite, unbleached	gray	.....
Sulphite, bleached	gray	white
Chlorine gas	red	yellow
Milk of lime	green	olive-white
Bleach	green	yellow-white
SODA PULP		
Caustic liquor, strong	yellow	brown (red flanges)
Weak	yellow	tan (red flanges)
Carbonate liquor (green)	green	brown-white
Strong black liquor	green	brown-black
Weak black liquor	green	brown-gray
Brown stock	green	brown-buff
Unbleached stock	green	brown-gray
Bleached stock	green	brown-white
Sludge (lime mud)	green	olive
SULPHATE PULP		
Same as Soda Mill.		
STRAW PULP		
Milk of lime	green	olive
OLD PAPER		
Bleach liquor	green	yellow-white
Soda ash	green	brown-red
Defibered stock	green	black-gray
Unbleached stock	green	green-brown
Bleached stock	green	gray-green
CONVERSION		
Slush	green	gray-tan
Paper stock	green	gray-yellow
White water Couch pit stock Broke stock	green	green-white

Recent Developments in Burning Powdered Coal Under Steam Boilers*

By Henry Kreisinger

This paper deals with the development of water or steam-cooled furnaces for burning powdered coal in steam generating units, and points out that these water and steam-cooled furnaces make it possible to take full advantage of turbulent mixing in the combustion space which is necessary for high rates of combustion.

Refractory Lined Furnaces

The early installations for burning powdered coal under steam boilers had refractory lined furnaces which were designed and constructed along the same line as the stoker furnaces of that time. The main difficulties encountered, when burning pulverized coal in such furnaces, were the slagging of the ash and rapid erosion of the fire-brick furnace lining. The ash fused and accumulated in molten or semimolten condition at the bottom of the furnace and was very difficult to remove either hot or when cooled. The removal of such slag required much hard labor and caused frequent outage of the boiler from service.

The ash was sprayed on the hot refractory walls and ran down in molten condition eroding the brick and washing it to the bottom of the furnace. Under such conditions, the fire-brick lining wasted away rapidly and required frequent repairs. The washing away of the brick lining was particularly rapid if the flames were allowed to impinge on it. In order to prevent the impingement of the flames the walls were moved out of the flame by making the furnaces larger than was necessary for nearly complete combustion.

Effort to Prevent Flame Impingement

In the effort to prevent the impingement of flames on the fire-brick lining, the turbulence of the furnace gases was limited to the minimum. The lack of sufficient turbulence made the process of combustion rather slow so that only a small amount of coal could be burned per cu. ft. of combustion space. Usually the rate of combustion was limited to an average of about two lbs. of coal per cu. ft. of the entire combustion space, or a rate of heat liberation of about 25,000 B.t.u. per cu. ft. per hour. This average was low because, in the effort to prevent the impingement of the flame against the furnace lining, the combustion space near the walls was effective to only a small degree.

Hollow Refractory Walls

Efforts to product, at reasonable cost, refractories that would resist the erosive action of the molten ash, met with little success. The composition of coal ash varies so much that it is difficult to get refractory material that will resist each variation in the ash composition. Air-cooled hollow walls gave some relief, but the problem of erosion was not completely solved.

As the size of the steam generating units was rapidly increasing and the furnace walls had to be built very wide and high, the furnace designer faced the problem of making the walls mechanically strong so that they would not collapse before they were worn out by the erosion of molten ash. The expansion and contraction of such large walls is great, and it is difficult to provide slip joints on such structures.

Water-Cooled Furnaces

During the last three or four years the furnace designer gradually came to the realization that the right way to build a furnace for burning powdered coal was to make the furnace walls of water-cooled or steam-cooled surfaces; in other words, to build the boiler around the furnace. Such metallic walls would be very strong and durable and would also absorb a large amount of heat, thereby relieving the boiler proper of much of the work, and, particularly would relieve the tubes in the first row of the excessive heat to which they are exposed in the refractory furnaces. This is no small consideration these days when boilers are operated at high ratings.

In furnaces equipped with water-cooled walls, the rate of heat liberation may be much higher because the walls will not be damaged by flame impingement and high temperatures; all of the combustion space may be utilized effectively; furnaces and burners may be so designed as to cause intense turbulence of the gases, resulting in more thorough mixing and rapid combustion. In fact, the average rate of heat liberation may be increased up to 40,000 B.t.u. per cu. ft. of combustion space per hour, with nearly complete combustion. This increased rate of heat liberation permits the use of a smaller furnace.

Fin Tube Furnace Walls

The term, "fin tube" is applied to a specially designed tube of standard boiler size and gage to which have been welded two flat steel bars, or fins, one on each side of the tube. A row of such tubes, when rolled into a header, makes a practically continuous metal surface, as shown in Figure 1. The fins are 1½ in. wide and ¼ in. thick. One of the flat surfaces of each fin is exposed to the radiant heat from the flame. This radiant heat is transmitted by conduction to the tube and thence to the water inside of the tube.

* Paper presented before International Coal Conference in Pittsburgh, Pa., Nov., 1926.

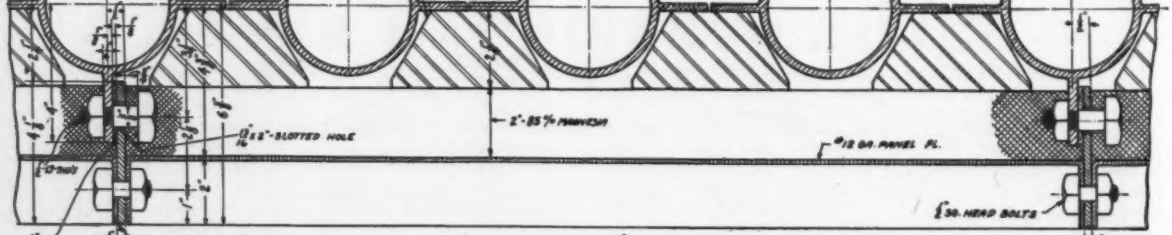

FIG. 1

Cross Section of C-E Fin Furnace Wall

Intensive Mixing in Furnace Important

Intensive mixing in the furnace is by far the greatest factor in the promotion of rapid combustion because it brings the oxygen and carbon together. When the two are once brought together, at the ordinary furnace temperature the chemical combination is almost instantaneous. In other words, the rate of combustion is determined by the rapidity with which oxygen and carbon are brought together and not by the speed with which they combine after they are brought together.

The particles of powdered coal although small in size, when compared with the oxygen molecules are still very large. A very large number of the oxygen molecules must be brought in contact with the coal particles before the latter are completely burned. The surface area of the particles is rather small so that only a small number of oxygen molecules can be brought in contact at a time. The products of combustion must be continually removed from the surface in order that a contact with fresh oxygen molecules can be made. Intensive mixing helps to do this.

Furnace Temperatures

The temperature above the limit of ignition is of minor importance because it affects directly the rate of chemical combination of oxygen and carbon when the two are brought together. It does not affect materially the mixing or the bringing of the oxygen and carbon together.

It is frequently observed that rapid combustion is accompanied by high temperatures, and the conclusion is sometimes drawn that the rapid combustion is caused by high temperatures. However, the true sequence of the cause and the effect is this: intense mixing causes rapid combustion and rapid combustion causes high temperatures.

With the usual rates of combustion found in steam boiler practice, there is very little danger that water-cooled surface walls will cause incomplete combustion by excessive cooling of the flame. The temperature of the flame is always high enough for anything to burn that is burnable as long as the supply of air is sufficient and the air mixes properly with the coal particles.

Effect of Preheated Air on Furnace Design

Another factor contributing to the demand for the water-cooled furnace walls is the preheating of the air used for combustion. The practice of bleeding turbines for heating feed-water is growing rapidly. This practice limits the use of the economizer and its place is taken by the air preheater. With the use of preheated air, the furnace temperature is higher, and, therefore, the wear on the refractory furnace walls is greater. Water-cooled furnaces are not damaged by high temperatures and are therefore better suited to the use of preheated air.

Steam Generating Unit at Lakeside Station

Figure 2 shows the water and steam-cooled furnace of a high pressure boiler at the Lakeside Station of the Milwaukee Electric Railway and Light Company. In this furnace, the front wall is made of fin tubes. The arch and upper part of the front wall are protected by plain tubes. The side walls are made of the radiant type of superheater and the back wall of the radiant type reheater. The bottom is cooled with a water screen and the tubes of the boiler form the roof of the furnace.

Steam is generated at a pressure of 1200 lbs. and is superheated to a temperature of 720 deg. F. It is then expanded in a high pressure turbine to 300 lbs. pressure and 420 deg. F. temperature. The steam from this high pressure turbine is passed through the reheater where it is heated to 720 deg. F. It is then discharged into the main steam line of the plant and is used in the large turbines.

The capacity of the boiler is 240,000 lbs. of steam per hour. The heating surfaces are as follows:

Water-heating surface in furnace	1,544 sq. ft.
Water-heating surface of boiler	28,532 sq. ft.
Total heating surface in furnace	3,407 sq. ft.
Superheating surface	930 sq. ft.
Reheating surface	933 sq. ft.
Total heating surface in furnace	3,047 sq. ft.
Air preheating surface	40,320 sq. ft.

Powdered coal is fired vertically downwards through 12 burners. Primary air is supplied under pressure of 15 in. of water, at a temperature of 300 deg. F. Secondary air is supplied through the burners and through ports in the front wall, at a temperature

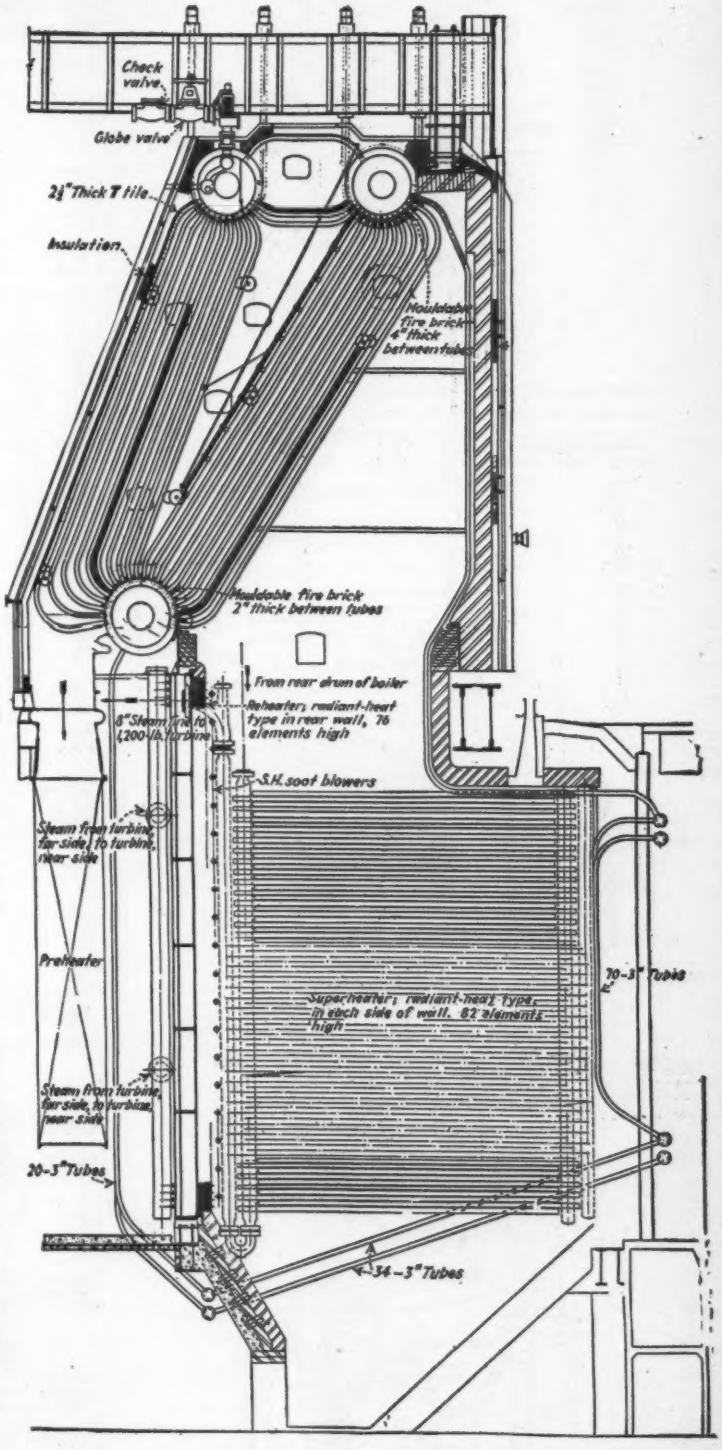
Check valve
Globe valve
2½" Thick T tile
Insulation
Mouldable fire brick 4" thick between tubes
Mouldable fire brick 2" thick between tubes
From rear drum of boiler
Reheater; radiant-heat type in rear wall, 76 elements high
8" Steam line to 4,200-kw. turbine
S.H. soot blowers
Steam from turbine, far side, to turbine, near side
Preheater
70-3" Tubes
Superheater; radiant-heat type, in each side of wall, 82 elements high
Steam from turbine, far side, to turbine, near side
20-3" Tubes
34-3" Tubes

FIG. 2

Twelve hundred pound pressure unit, Lakeside Station, The Milwaukee Electric Railway and Light Company; superheaters in side walls of furnace; reheater in rear wall; fin tubes in furnace front wall, plain tubes under arch and in front wall above arch.

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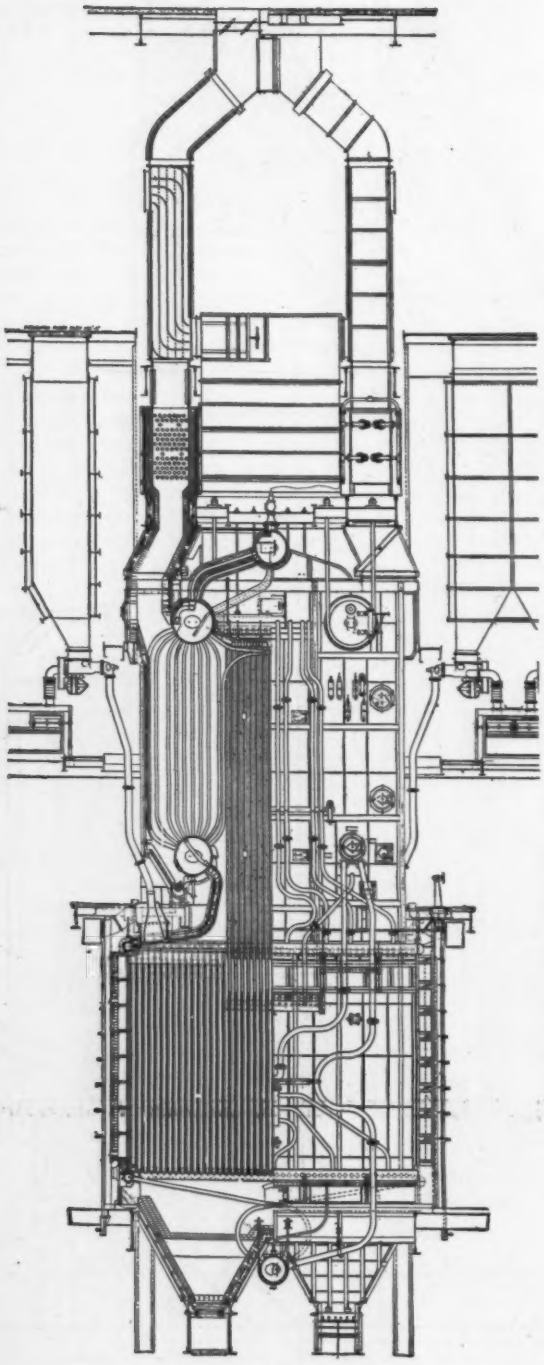

FIG. 3

Steam Generating Unit, Kip's Bay Station, New York Steam Corporation; all furnace walls of fin tube construction.

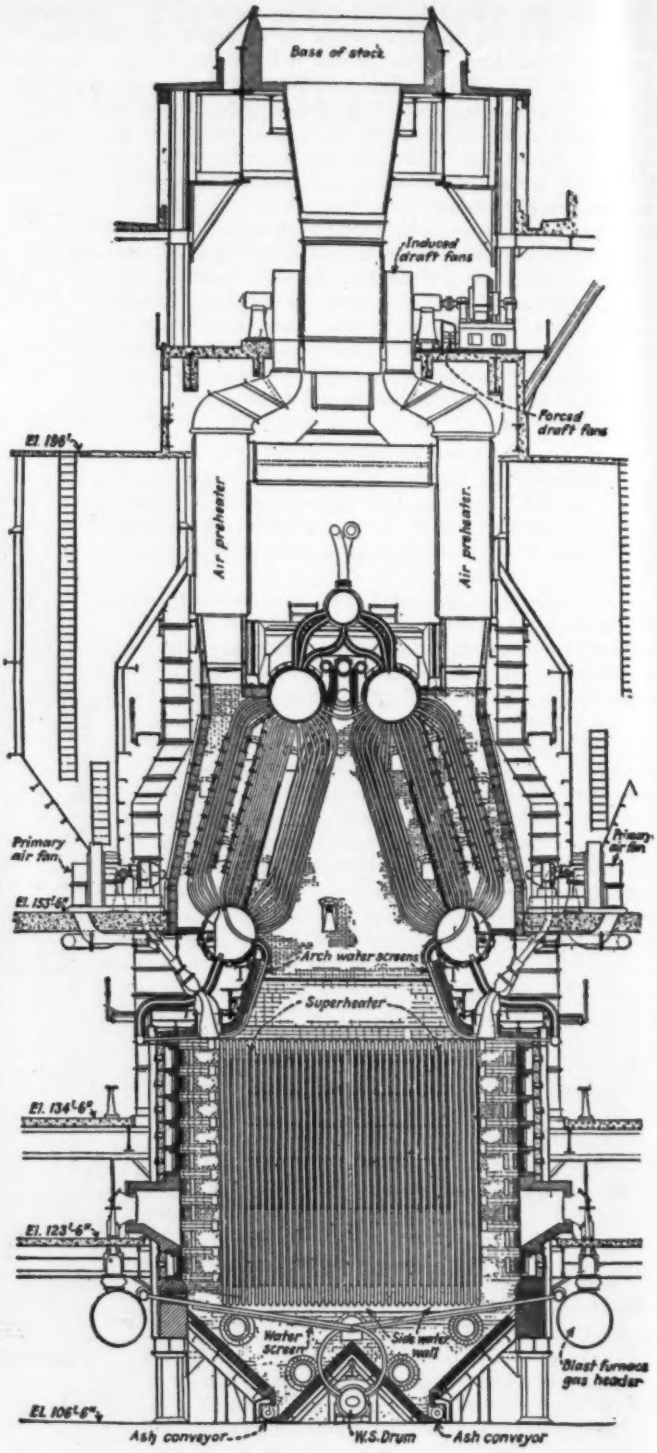

FIG. 4

Steam Generating Unit, Fordson Plant, Ford Motor Company; fin tubes and radiant superheaters in side walls; convection superheater in first bank of boiler tubes; arches protected with plain tubes.

of about 500 deg. F. and a pressure of about half an inch of water.

Steam Generating Unit at Kip's Bay Station

Figure 3 shows a completely water-cooled furnace installed in the Kip's Bay Station of the New York Steam Corporation, all four walls of which are of the fin-tube construction. The furnace bottom is cooled by a water screen, and the furnace roof is formed by the boiler tubes. The arrangement of the heating surfaces is as follows:

Furnace surface	
Water heating surface in side walls	1,336 sq. ft.
Water heating surface in side walls between boiler tube banks	666 sq. ft.
Water heating surface in front walls	942 sq. ft.
Water heating surface in arches	500 sq. ft.
Water screen	688 sq. ft.
Total surface in furnace	4,132 sq. ft.
Boiler surface	10,802 sq. ft.
Total water-heating surface	14,802 sq. ft.
Superheating surface	None
Economizer	10,802 sq. ft.
Air preheater	46,800 sq. ft.
Total surface	71,682 sq. ft.
Working pressure	275 lb.

Coal is fired vertically downwards on two sides of the furnace through twelve burners located in the arches. Secondary air is supplied through the burners and through air ports in the two front walls under a pressure of 1 to 2 in. and preheated to about 500 deg. F.

The effective combustion space is 19,000 cu. ft. Normal capacity of the unit is 340,000 lbs. of steam per hour.

The water-cooled furnace of the Fordson Plant of the Ford Motor Company, shown in Figure 4, is somewhat similar to that of the Kip's Bay Unit. It differs from it in that the side walls between the two banks of boiler tubes and the two front walls are not water-cooled, and that radiant type superheaters are installed behind the fin tubes in each side wall. The tubes directly in front of the superheater elements are not finned.

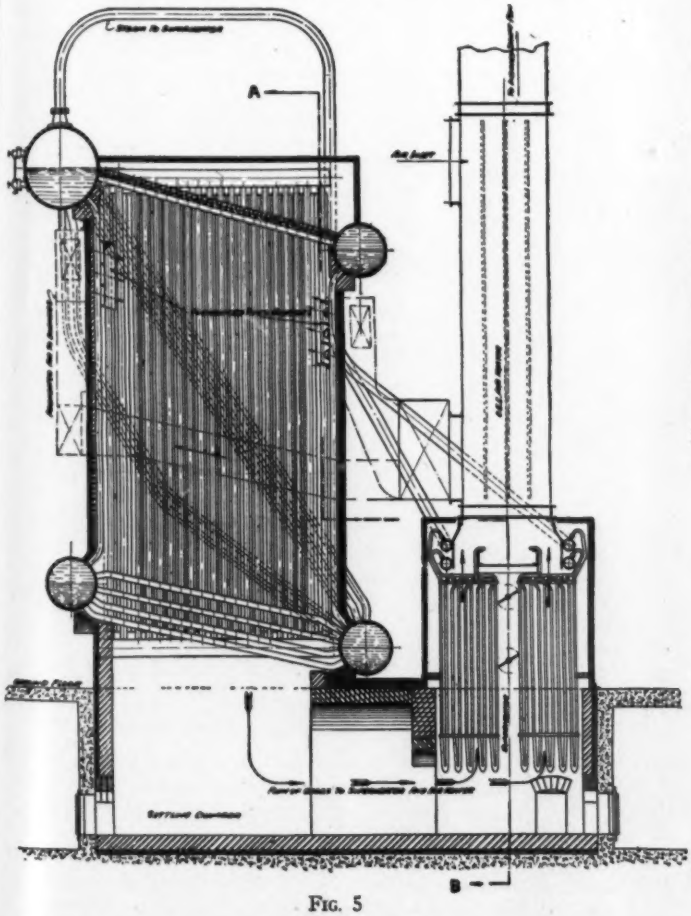

FIG. 5

Combustion Steam Generator, Taylor Brothers Steel Plant, Manchester, England

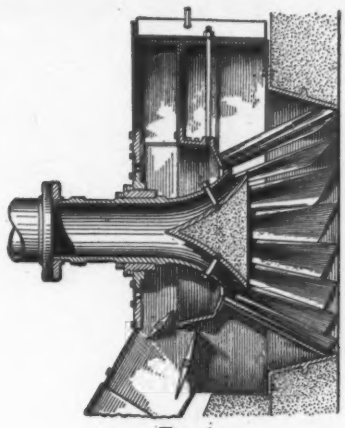

FIG. 6

Couch burner for turbulent mixing in furnace.

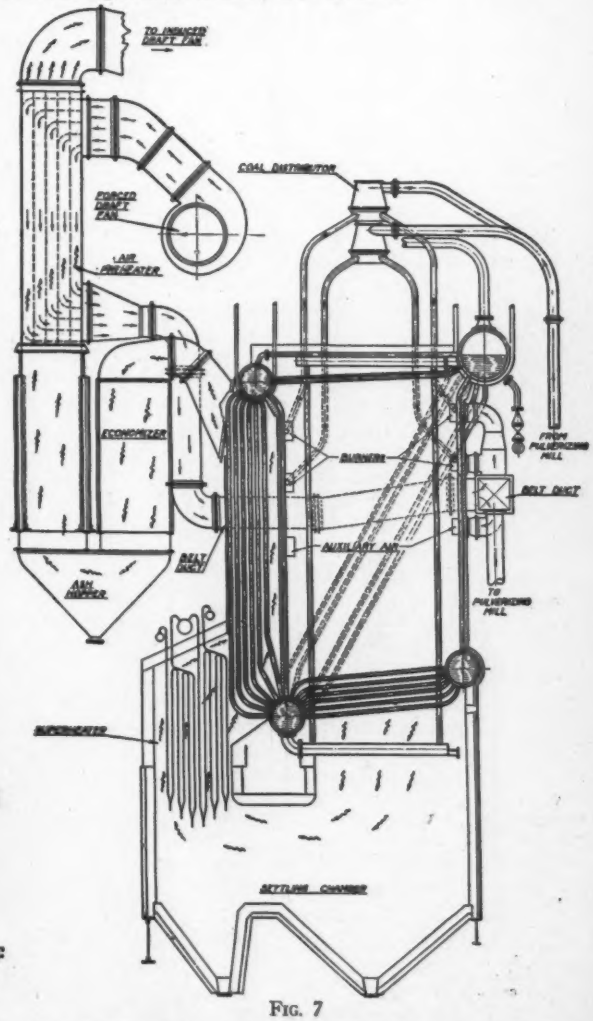

FIG. 7

Combustion Steam Generator, Calumet Station, Commonwealth Edison Company; all furnace walls of fin tube construction.

Some convection type superheating elements are placed between the first three rows of boiler tubes.

The arrangement of heating surfaces at the Fordson Plant, is as follows:

Furnace surface	
Water heating surface in side walls	1,554 sq. ft.
Water heating surface in arches	750 sq. ft.
Water screen	710 sq. ft.
Radiant superheating surface in side walls	1,100 sq. ft.
Total surface in furnace	3,114 sq. ft.
Boiler surface	26,470 sq. ft.
Total water heating surface	29,484 sq. ft.
Convection type superheater	3,520 sq. ft.
Total superheating surface	4,620 sq. ft.
Air preheating surface	39,700 sq. ft.
Working pressure	300 lb.

Powdered coal is fired vertically downwards from two sides of the furnace through 24 burners located in the arches.

Normal capacity of unit 340,000 lbs. of steam per hour.

Peak capacity 480,000 to 500,000 lbs. per hour.

Effective combustion space 22,000 cu. ft.

Combustion Steam Generator

The foregoing three furnace designs show to what extent water or steam-cooled surfaces are applied in the construction of metallic furnaces for standard types of boilers. Figure 5 shows a special design of steam generating unit in which a large part of the boiler has been built around a furnace of a suitable size and shape. The furnace is nearly square in cross section. Its height is about twice its width. All four walls are of the fin-tube construction. The roof is made of plain tubes supporting a layer of tiles. At the bottom of the furnace is a bank of tubes consisting of four horizontal rows of water tubes.

Powdered coal is fired through eight burners, two in each corner near the top of the furnace. The mixture of coal and primary air is projected nearly horizontally towards the center of the furnace in such a way that the streams of the mixture are tangent to a circle about 3 ft. in diameter. Preheated secondary air is supplied under pressure of 1 to 2 in. of water. It is admitted around the burners and travels in about the same direction as the mixture of fuel and primary air. The mixture of the coal and air travels in a helical path downwards, and the products of combustion leave the furnace through the bank of tubes at the bottom of the furnace. The helical flow of the mixture through the furnace causes intense turbulence, thus causing rapid combustion and high flame temperature, permitting rates of combustion resulting in the liberation of 40,000 B.t.u. per cu. ft. of combustion space per hour. Turbulence of such intensity could not be attempted in a refractory lined furnace without rapid destruction of the refractories.

After the products of combustion pass through the bank of tubes at the bottom of the furnace, they turn upwards and flow through the superheater. After that they may flow through an economizer into an air heater, or, if the economizer is omitted, directly into the air heater. The amount of water heating or air heating surface placed in the path of the products of combustion depends on the temperature at which it is desired to have the gases leave the steam generating unit.

Steam Generating Unit at Calumet Station

Figure 7 shows a steam generating unit installed by the Commonwealth Edison Company of Chicago at their Calumet Station.

The heating surfaces of this unit are as follows:

Water heating surface	
Rear bank of tubes	3,637 sq. ft.
Side walls	1,710 sq. ft.
Roof	254 sq. ft.
Bottom bank of tubes	1,375 sq. ft.
Total water-heating surface	6,976 sq. ft.
Superheating surface	3,000 sq. ft. approx.
Economizer	5,250 sq. ft.
Air-heating surface	25,200 sq. ft.
Steam pressure	360 lb. gage
Effective combustion space	5,000 cu. ft.
Normal capacity of unit	125,000 lb. per hr.
Peak capacity of unit	150,000 lb. per hr.

Rate of Heat Absorption in Furnace

The rate at which the water heating surfaces in the furnace absorb heat, varies from about 20,000 to 60,000 B.t.u. per sq. ft. per hour and depends on the rate of heat liberation per sq. ft. of surface exposed to radiation. Approximately one half of the total heat absorption by the water takes place in the furnace.

Turbulent Mixing in Furnace

The importance of intense turbulence in the combustion of powdered coal is generally recognized, and the designers of coal burning equipment strive to obtain it in various ways. In the furnace, shown in Figure 7, turbulence is obtained by four streams of a mixture of air and coal entering at right angles to each other. Similar turbulence can be obtained also by the burner, shown in Figure 6, in which a larger number of air jets, or jets of a mixture of coal and air, are forced into the furnace at comparatively high velocity in such a way as to start a rotary motion of the mixture. If such a burner is properly located in the furnace so that the flame is confined by the furnace walls, the rotary motion may continue for some distance in the furnace and results in good mixing. The design of this burner is similar to that of an oil burner. A mixture of powdered coal and primary air enters in the center of the burner and is spread into a cone by the conical core placed in the bell-shaped end of the coal pipe. A number of jets of secondary air enter between the fan-shaped blades and impinge nearly at right angles against the cone of the coal and start rotary motion. This type of burner is meeting with considerable success. When properly placed so that turbulence is maintained in the furnace, rates of combustion up to 35,000 B.t.u. per cu. ft. per hour can be obtained.

Shower Pipes for Board Machine Cylinders and Felts

SPECIAL INQUIRY No. 77

A member writes: "We are running into some trouble with the shower pipes on our board machine for the cylinders and felts by clogging due to sand and occasional fiber. The mill men have a very easy way of overcoming the difficulty by boring out the holes and making them larger so that they will not fill up so quickly. By doing so we use entirely too much water, at least, we can never get enough fresh water for the purpose. What I would like to know from members and others operating board machines, is outlined in the following items:

1. "Kind of shower pipe and name of maker used on cylinders and felts.
2. "Kind of water, fresh or white water used on each.
3. "Water pressure at shower pipe.
4. "Gallons of water per foot of shower pipe length.
5. "When home-made shower pipes are used what is the diameter and pitch of holes?
6. "If trouble is encountered from sand or fiber how is it overcome?
7. "If white water is used on either cylinders or felts what treatment does it receive?
8. "Where fresh water is used please indicate type of filter and mesh of screen used."

A transcript of the responses in the form of Special Report No. 77 will be sent to those contributing to the discussion. Replies should be sent to

W. G. MACNAUGHTON, Secretary TAPPI,
18 East 41st Street, New York, N. Y.

Price Bros. & Co. Become Corporate Members of TAPPI

The addition of Price Bros. & Co., Ltd., with plants at Jonquiere, Kenogami and Riverbend, P. Q., to the list of corporate members, is one of the evidences of progress of the Technical Association.

The individual members connected with this progressive company have always cooperated closely with all activities and by its action the company now expresses its approval of what the Association is trying to do to advance the paper industry.

Paper Testing Laboratories*

In its efforts to promote the use of specifications by purchasers of commodities, the national Bureau of Standards has compiled a list of laboratories in United States that are prepared to test the various kinds of commodities to determine whether or not they comply with the purchase specifications.

An outstanding fact in the specification situation is that a great many purchasers who should use specifications are not doing so because they are neither equipped to make their own acceptance tests nor do they know of laboratories which are in a position to check the deliveries. It is to this group that this list of laboratories will prove most beneficial.

In abstracting the 180-odd commercial laboratories and about 125 college laboratories listed, a selection is made of those indicated as testing paper and paper products.

Classification of Products Tested

470—Paper (except printed matter)
480—Books and other printed matter
490—Miscellaneous paper products:
a—Appearance
c—Chemical
p—Physical, mechanical
s—Service, performance, calibration

Geographical Listing of Laboratories

	Commodities and Tests
California	
Twining Laboratories, 2146 Merced Street, Fresno	470pc, 480s, 490s
Los Angeles Testing Laboratory, 1300 S. Los Angeles Street, Los Angeles	470cp, 480cp, 490cp
Arthur R. Maas Laboratories, 308 East Eighth Street, Los Angeles	470c (paper pulp)
Smith-Emery Company, 245 South Los Angeles Street, Los Angeles (branches at Seattle, San Francisco, Pittsburgh, Chicago, New York, Birmingham, Pueblo, Glasgow, Montreal)	470c
Western Precipitation Company, 1016 West Ninth Street, Los Angeles (eastern office at New York)	**470c**
Colorado	
J. W. Richards & Son, 1118 Nineteenth Street, Denver	470c
District of Columbia	
Industrial Research Laboratories, 2201 New York Avenue, N. W., Washington	470cpa, 490cpa
Illinois	
Deavitt Laboratories (Inc.), 209 LaSalle Street, Chicago	470c, 490c
Robert W. Hunt Company, 2200 Insurance Exchange, Chicago (branches at New York; Pittsburgh; St. Louis; Jacksonville; San Francisco; Kansas City, Mo.; Seattle; Dalles; Montreal (1001 McGill Building); Toronto; (1303 Bank of Hamilton Building); Vancouver (1527 Standard Bank Building); New Orleans; Philadelphia; London, England (34/40 Ludgate Hill, E.C.4); Cleveland, Los Angeles; Portland, Ore., Cincinnati)	470c
Industrial Research Laboratories of Peter Dengler, (Inc.) 124 West Kinzie Street, Chicago	480c, 490c
Mariner & Hoskins, 111 West Monroe Street, Chicago	470c
Paper Laboratories (Inc.), 1700 Prairie Avenue, Chicago	470cp
Wilson & Ward (Inc.), 608 South Dearborn Street, Chicago (branches at New York; Pittsburgh; Cleveland; St. Louis; Kansas City, Mo.; Denver; Philadelphia)	470cp, 480cp, 490cp
Maine	
A. B. Andrews, 14 Lisbon Street, Lewiston	470c
Massachusetts	
Cotton Research Company (Inc.), 1020 Washington Street, Boston	470cp
Skinner, Sherman & Esselen (Inc.), 276 Stuart Street, Boston	470cp, 490cp
Arthur D. Little (Inc.), Charles River Road at Kendall Square, Cambridge	470cpa, 480cpa, 490cpa
New England Laboratories, 121 Chestnut Street, Springfield	470cp (pulp & paper)
Michigan	
Detroit Testing Laboratory, 554 Bagley Avenue, Detroit	470cp, 480cp, 490cp
Perry Testing Laboratory, 210 Third Street, Detroit	470pc
Missouri	
Kansas City Testing Laboratory, 700 Baltimore Avenue, Kansas City	**470cp**
New Jersey	
Frederick J. Maywald, 1 William Street, Belleville	470cps, 480c (paste)
United States Testing Company, (Inc.), Hoboken (branches at New York; Philadelphia; Paterson; New Bedford, Mass.; Shanghai, China)	470cpa, 480cpa, 490cpa
Container Testing Laboratories (Inc.), Pine and Stickle Streets, Rockaway	470p, 490p (boxes)
Philip O. Gravelle, 114 Prospect Street, South Orange	470a
New York	
Touceda Laboratories, 943 Broadway, Albany	470p, 490p
Ekroth Laboratories (Inc.), 461 Eighth Avenue, New York City	470cp, 490cp
Electrical Testing Laboratories, Eightieth Street and East End Avenue, New York City	470p
Dr. William M. Grosvenor, consulting chemist and factory engineer, 50 East Forty-first Street, New York City	470cps, 490cps
New York Testing Laboratories, 80 Washington Street, New York	470cpa, 490cpa (pulp)
Stillwell & Gladding, 80 West Street, New York City	470c
Oregon	
E. W. Lazell, 537 Railway Exchange Building, Portland	470cpa
Pennsylvania	
E. L. Conwell & Company, 2024 Arch Street, Philadelphia	470p

* Directory of Commercial Testing and College Research Laboratories, Miscellaneous Publications No. 90, Department of Commerce, Bureau of Standards. Sold by Superintendent of Documents, Government Printing Office, Washington, D. C. Price 15 cents.

J. Atlee Dean, 614 South Forty-eighth Street, Philadelphia 470ca
Samuel P. Sadtler & Son (Inc.), 210 South Thirteenth Street, Philadelphia 470ca, 490ca
Pittsburgh Testing Laboratory, Stevenson Street at Locust, Pittsburgh (branches at Buffalo; New York City; Universal, Pa.; Easton; Philadelphia; Miami; Tampa; Birmingham; Ragland, Ala.; Leeds, Ala.; Richard City, Tenn.; Kingsport, Tenn.; Dallas; Chicago; Detroit; Cleveland; Houston) 470p, 480p, 490p

TEXAS

Felix Poquin, chemist, 305½ Twenty-second Street, Galveston ..... 470c (pulp)

WASHINGTON

I. F. Laucks (Inc.), 314 Maritime Building, Seattle (branches at Tacoma, Portland, Vancouver (349 Railway Street), Tsingtao (P. O. Box 123), China.) 470c

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Paper Making Industry

Clarence J. West, Chairman

Apparatus for the Manufacture of Oiled Paper. L. L. Leadbetter. U. S. pat. 1,593,128, July 20, 1926. Between the last drier and the calendar the sheet is passed over a roll which dips in a bath of heated oil.—A.P-C.

Paper Resistant to Moisture. E. Fues. U. S. pat. 1,593,296, July 20, 1926. Paper is impregnated with a solution such as aluminium sulphate and formaldehyde, having acid properties, dried at a temperature below 100 PC. and heated at temperatures of about 60 degrees C to 100 degrees C., subsequent to this drying, in order to effect a further drying.—A. P-C.

Ornamental Paper. M. Rudie. U. S. pat. 1,607,482, Nov. 16, 1926. The paper is ornamented by applying to the surface dyes of chemically repellent nature side by side, thereby enabling the dyes in their antaginistic reaction to build up a border of heightened color outlining the division between the color areas.—A. P-C.

Ornamental Paper and Method of Making Same. E. Mahler and C. G. Bright assignors to Paper Patents Co. U. S. patent, 1,595,207, Aug. 10, 1926.—The color solution is allowed to fall in drops on the substantially unformed web on the wire near the breast roll, a layer of blending pulp is flowed on top of the colored sheet is furnished in the usual manner.—A.P-C.

Waterproof Paper. W. Wheildon assignor to E. H. Angier. U. S. pat. 1,595,637, Aug. 10, 1926.—Waterproofed paper suitable for wrapping purposes has a cringled base impregnated with pitch and a surface which is non-tacky.—A. P.-C.

Duplex Blue-Print Paper. H. Schmidt and W. P. Kleb. U. S. pat. 1,599, 147, Sept. 7, 1926. The paper comprises a relatively thin outer sheet saturated by a sensitizing solution and a heavy base sheet coated on its outer surface with the solution, both sheets being coalesced by pressure and readily separable when in a dry condition.—A.P-C.

Paper-Crinkling Machine. W. A. Lorenz assignor to The Otaka Fabric Co. U. S. pat. 1,601,633, Sept. 28, 1926. Paper is thrust by means of a pair of grooved feed rolls in a stationary constricted throat, which is more constricted at the delivery end than at the intake end. Guiding tongues extend from the throat into the grooves of the feed rolls.—A.P-C.

Abrasive Paper. W. A. Lorenz U. S. pat. 1,602,365, Oct. 5, 1926. Paper is gathered in traverse directions to limber the fibers, then smoothed out to render it flexible and then abrasive material is applied to the surface to produce a flexible or limp abrasive sheet.—A.P-C.

Reinforced Corrugated Paper. C. H. Howard assignor to Paper Products Machine Co. U. S. pat. 1,605,953, Nov. 9, 1926 The patent covers a semi-stiff corrugated sheet of paper and facing sheet of reinforced paper pasted to the corrugated sheet. The facing sheet consists of a two-ply sheet of paper reinforced by a set of substantially parallel unspun fibers extending transversely between the two sheets and of a second set of substantially parallel unspun fibers extending longitudinally between the two sheets both sets of fibers being held in position by the adhesive which unites two plys.—A.P-C.

Stencil Sheet. J. Bilsky assignor to A. B. Dick Co. U. S. pat. 1,594,786, Aug. 3, 1926. An open porous base such as Yoshino paper is coated with a composition including a cellulose compound such as nitrocellulose and aleic acid. Rubber also may be used. A.P-C.

Stencil Sheet. J. Bilsky assignor to A. B. Dick Co. U. S. pats. 1,597,425 and 1,597,426, Aug. 24, 1926. No. 1, 597,425. An open porous sheet such as Yoshino paper is coated with a cellulosic composition such as cellulose xanthate and the coating is coagulated to render it insoluble. No. 1,597,426 specifies forming stencil sheets by coating similar material with a water-soluble cellulosic composition, such as cellulose xanthate, and butyric acid which spontaneously becomes impermeable to ink after being applied to the sheet.—A.P-C.

Waterproof Paper. A. S. O'Neill assignor to Western Cartridge Co., U. S. pat. 1,594,375, Aug. 3, 1926. The material is immersed in a hot bath, e.g., of paraffin, and then transferred to a bath of lower temperature *via* a heated transfer chamber—A. P.-C.

Stencil Sheet. S. Horii. U. S. pat. 1,594,525, Aug. 3, 1926.—Fibrous material such as Yoshino paper is impregnated with a composition comprising esters of polysaccharides such as starch acetate or nitrocellulose and naphthenic acids. Japan wax, methanol, acetone and amyl alcohol also may be used.—A.P-C.

Stencils for Duplicating Apparatus. P. Campion assignor to A. B. Dick Co. U. S. pats. 1,592,338 and 1,592,340, July 13, 1926. No. 1,592,339. A base such as Japanese Yoshino paper is coated with a composition including collodion and castor oil, and also with a solidifiable material such as paraffin applied to one side of the paper. No. 1,592,340 specified a coating including celluloid and an oil such as castor oil.—A.P-C.

Paper. H. H. Rafsky (now Rafton). U. S. pat. 1,595,416, Aug. 10, 1926. The paper is loaded with a mixture of calcium carbonate and magnesium basic carbonate in a state f very fine subdivision. —A.P.-C.

Stencil Sheet. A. B. Davis assignor to A. B. Dick Co. U. S. pats. 1,594,769 and 1,594,770, Aug. 3, 1926. No. 1,594,769: A sheet of material such as Yoshino paper is coated with starch or cellulose ethyl ester which may be associated with solvents, wax, chlorinated naphthalene, etc. No. 1,594,770 specifies stencil sheet with a coating of metal foil, e.g., tin, lead, bismuth or silver.—A. P-C.

Stencil Sheet. A. B. Davis assignor to A. B. Dick Co. U. S. pats. 1,597,435 and 1,597,436, Aug. 24, 1926. No. 1,597,435: A composition for coating stencil sheets comprises a colloid such as gelatin dispersed in water and an emulsifying agent comprising a starch-sulphonated oil mixture. No. 1,597,438 specifies a protein material such as gelatin dissolved in glycerin, ethylene glycol or

other substantially anhydrous organic solvent and a modifying agent, e.g., stearic and oleic acids and paraldehyde.—A. P.-C.

Miscellaneous

Problems of Heat Economy. P. Michel. Papierfabr. 24, 545-552 (Sept. 5, 1926). An address in which heat economy in the power plant is discussed.—J. L. P.

Graphical Methods for Determining Remunerative Producing in the Paper Industry. Mirus. Papierfabr. 24, 552-556 (Sept. 5, 1926). Graphical mathematical methods for determining paability under varying conditions are described with reference to (1) materials, (2) wages, and 3 plant charges. etc.—J. L. P.

The Hydration of Cellulose. Anon. Papierfabr. 24, 469-470 (Aug. 1, 1926). A discussion of the views of J. Strachan on the hydration of cellulose (compare C. A. 20, 2068 (1926).—J. L. P.

Contribution on the Electrical Properties of Paper. M. Speter. Papierfabr. 24, 431-432 (July 11, 1926). Supplementary to an article on the same subject in Papierfabr. 24, 119-120 (1926). Samples of black glazed paper could not be electrified by rubbing, etc. owing to the fact that the black dyestuff was a conductor. Asbestos paper cannot be electrified by Friction on account of the partially conducting properties of the asbestos itself. The properties of statically charged substances are discussed.—J. L. P.

The Dedication of the Chemical-Technological Institute at the Friedrich Polytechnikum Cothen. Opfermann. Papiefabr. 24, 295-297 (May 16, 1926). Descriptive.—J. L. P.

New Methods for the Dewatering Extracting and Washing of Half Stocks. F. Hoyer. Papierfabr. 24, 462-464 (July 25, 1926). The applicability of the Mosebach spiral press in the pulp industry is discussed.—J. L. P.

The New Technological Institute for Paper at the Friedrichs-Polytechnikum in Cothen. F. Hoyer. Papierfabr. 24, Festheft 106-109 (June 5, 1926). Descriptive.—J. L. P.

The Technical Institute for Paper at the Friedrichs-Polytechnikum. von Possanner. Wochbl. Papierfabr. 57, Sondernummer 82-86 (June 12, 1926). Descriptive.—J. L. P.

Old Paper Mills of the Rhine Province. F. von Hoessle. Wochbl. Papierfabr. 57, 581-584 (May 22), Sondernummer 11-27 (June 12) 773-776 (July 10) 849-853 (July 31,1926). Historical descriptions of several of the old mills of the Rhine province, Germany.—J. L. P.

Recent Developments in Pulp and Paper Manufacture in America. W. Brecht. Wochbl. Papierfabr. 57, 584-588 (May 22) Sondernummer 37-50 (June 12), 707-709 (June 26) 827-829 (July 24, 909-911 (Aug. 14), 961-963 (Aug. 28, 1926). The conclusion of a series of articles on American practice in pulp and paper manufacture, bleaching, beating, control of processes, and stock regulators. Recent developments in paper machine construction and operation are briefly discussed. The slope of the curve showing the increase in machine width during the years 1916-1926 is more pronounced than that of the curve showing the machine speed.—J. L. P.

The Chemical Pretreatment of Industrial Water. Drechsler. Papierfabr. 24, 309-310 (May 23, 1926). The chemical treatment of water by the aluminum sulphite method is described, with special reference to paper manufacture.—J. L. P.

Packing Costs. W. Roth. Papierfabr. 24, 310-312 (May 23, 1926). Descriptive of different methods employed for the wrapping and packing of paper.—J. L. P.

Bavarian Paper History. F. von Hoessle. Papierfabr. 24, 313-317 (May 23); Festheft 49-64 (June 5, 1926). Historical descriptions of several old Bavarian Paper mills.—J. L. P.

Indicators for the Pulp Industry. E. Oeman. Svensk Pappers Tidning, nos. 9, 10, 11 (1925)); Papierfabr. 24, 267-270 (May 2). 285-288 (May 9) 299-303 (May 16, 1926). Compare abstract in C. A. 19, 2743 (1925).—J. L. P.

The Russian Paper Industry of Today. C. Peters. Papierfabr. 24, 271-273 (May 1, 1926). Descriptive of the general conditions of the Russian paper industry and of the 12 groups of paper mills.—J. L. P.

Metallographic Studies on Corrosion in the Pulp and Paper Industry and Wood Grinders. V. Lindt. Papierfabr. 24, 513-515 (Aug. 22); 534-539 (Aug. 29, 1926). An address covering corrosion studies relating to the pulp and paper industry. 22 photomichrophotographs are shown. Corrosion is not so often the action of chemicals, such formic acid, magnesium chloride and sulphite liquor, but is due to the kind and composition of the metal used.—J. L. P.

Corrosion. H. Zurlinden. Wochbl. Papierfabr. 57, 747-749 (July 3, 1926). Modern corrosion theories are briefly discussed. Dissolved oxygen in water may be removed (1) by heating (2) by vacuum, and (3) by chemical combination with a specially prepared manganese-steel wool.—J. L. P.

Problems in Power Management. Michel. Wochbl. Papierfabr. 57, 766-767 (July 10, 1926). A report covering an address on problems connected with power plants in the pulp and paper industry.—J. L. P.

Abstracts of the Pulp and Paper Literature, Chemical Part. E. Graap. Zellstoff U. Papier 6, 316-321 (July 1926). Brief abstracts of articles relating to the chemistry of pulp and paper manufacture in German technical magazines. The period covered is Jan. Mar. 1926.—J. L. P.

A Machine Exhibit for the Papermaker. S. Ferenczi. Zellstoff U. Papier, 6, 360-362 (Aug. 1926). Descriptive of the machine exhibit, especially for papermakers, at the Jagenberg works, Dusseldorf, Germany.—J. L. P.

Conservation and Efficiency in Paper Making. Vance P. Edwardes. Paper Trade J. 83, No. 18, 33-36 (Oct. 28, 1926). Review of progress accomplished during the last few years, covering: waste utilization; closer utilization of pulpwood species; use of species not now extensively used, by customary methods, by new methods, and by modifications of existing methods; greater production from pulpwood, by improving pulping proceses, by improving wood yard operations, by preventing decay of stored pulp and by prevention of fiber losses in manufacturing operations; improved technic (rod mill, direct burning of concentrated black liquor, deodorizing sulphate mill gases, sulphite waste liquor evaporation); and bleaching.—A. P.-C.

Survey of Progress in the Industry. W. G. MacNaughton. Paper Trade J. 83, No. 18, 59-70 (Oct. 28, 1926). A survey of recent progress noted in the course of an inspection tour of more than sixty mills in the United States and Canada.—A. P.-C.

A Modern Daylight Paper Mill. John Cornell. Paper Mill 49, No. 46,22, 24 (Nov. 13, 1926). Brief discussion of the advantages of modern, well-lighted single-story, structures of the Austin type.—A. P.-C.

A New Relative Humidity Recorder. Leo. Behr. J. Opt. Soc. America Rev. Sci. Instrum. 12, 623-653 (June 1926). The theory and calculations on which the Leeds and Northrup relative humidity recorder is based are given in great detail. A mechanism is described capable of automatically balancing any network of impedances where the balance point is attained by the motion of one or more sliders along slide wires, and where the balance point is determined by the absence of current in the recorder galvanometer. From the formula for relative humidity in terms of the wet and dry bulb temperatures, it is shown that for constant humidity the relation between wet and dry bulb temperatures is very nearly a linear one, and that the value of the humidity is uniquely defined by the ratio (wet bulp temperature—A) (dry bulb temperature—B), where B is a constant and A is a function of the relative humidity but changes only slightly with it. By using a nickel resistance thermometer in a network which is essentially a split-circuit potentiometer, it is possible to secure a potential difference across the ends of a slide wire which is directly proportional to (dry bulb temperature—B). In another very similar circuit a potential difference is gotten which is proportional to (wet bulb temperature—A). This latter potential difference is automatically

balanced against a portion of the former by the recorder mechanism mentioned above, and the position of balance is indicative of the ratio (wet bulb temperature—) (dry bulb temperature—B), so that the instrument reads directly in relative humidity. The results of a check on the finished instrument are given from which it appears that the approximations made in the design and any inaccuracies introduced in the actual construction are of no greater magnitude than the uncertanties in the humidity formula itself. Two forms of wet bulbs are described which are capable of continuous operation. In one the customary wick is replaced by a spray, and in the other a long wick is provided so that a clean portion can be substituted for the soiled part merely by turning a roller to wind the wick from one holder to another. (Reprints of this article may be obtained from the Leeds and Northrup Co., Philadelphia).—A.P.-C.

Paper History of New England. Hugh P. Baker. Paper Mill 49, No. 42, 20-28 (Oct. 16, 1926) Paper Trade J. 83, No. 20, 55-60 (Nov. 11, 1926). Historical notes on the origin of the paper industry in New England and its development down to the present time.—A. P.-C.

Forest Research Institute Dehra Dun Paper and Pulp Section. Tekumalla Venkajee. Paper Trade J. 83, No. 17, 45-46 (Oct. 21, 1926). Description of the semi-commercial pulp and paper plant installed at Dehra Dun for investigating paper making raw materials and of the procedure followed in the tests.—A. P.-C.

Erratum: In Paper Trade J. of August 26, 1926, page 57, top of second column, in the abstract on "Shower Pipe for Paper Machines." instead of U. S. pat. 1,522,594" read "U. S. pat. 1,552,594".

The Pulp and Paper Industry of Austria. Norman S. Meese. Paper Mill 49, 35-36 (Nov. 20, 1926). Review of the present status of the industry.—A. P.-C.

Refiner. J. T. Murphy. U. S. pat. 1,588,044, June 8, 1926.—is refiner, for finishing stock from the beater, consists essentially of a roll with fly bars, similar to a beater roll, working in conjunction with an almost semi-circular bedplate with four sets of knives. The roll shaft bearings are mounted on yokes, the ends of which are supported on four pistons mounted in cylinders filled with fluid under a high pressure. The machine perferably consists of two rolls and bedplate which can be operated either in series, in parallel or independently.—A. P.-C.

The Patented Cellular (Zellenfilter) Devices of R. Wolf A.-G. A. D. J. Kuhn. Wochbl. Papierfabr. 57, 806-807 (July 17); Zellstoff U. Papier 6, 364 (Aug., 1926).—The patented Zellenfilter of Wolf is capable of a daily production of 7200-9600 kg. unbleached pulp, when used as a washing or thickening machine with a consistency variation from 1 to 20 per cent. As a dewatering appliance for pulp, the daily production is the same when the pulp consistency is increased to 40 per cent. As a save-all and thickener from P.PW per cent consistency to 8-14 per cent, its daily capacity is 1450-1900 kg. pulp.—J.L.P.

The Trend in Paper Mill Electrification. R. H. Rogers. Pulp and Paper 24, 1189-1190 (Oct. 7, 1926); Paper Mill 49, No. 41, 1, 6 (Oct. 9, 1926); Paper Trade J. 83, No. 17, 41-42 (Oct. 21, 1926).—Brief outline of the evolution taking place in pulp and paper mill equipment through increased electrification—A.P.—C.

The First German Machine for Fine Papers with Multiple Motor Drive. O. Kessler. Wochbl. Papierfabr. 57, Soundernummer 57-64 (June 12, 1926).—A description of the new electric Siemens-Harland drive for a paper machine in the Sacrau paper mill.—J.L.P.

The Electrical Operation of Multiple Motor Driven Paper Machines in Parallel. P. Weiske. Papierfabr. 24, 361-363 (June 13, 1926).—Descriptive of a system (Ger. pat. 401,960) for the operation of electrically driven paper machines.—J.L.P.

Results with Regulated Multiphase Current Shunt Paper Machine Motors. W. Stiel and J. Kozisek. Papierfabr. 24, Festheft 87-94 (June 5, 1926).—The use of Siemens-Schuckert multiphase shunt motors for the operation of paper machines is described.—J.L.P.

Approved Rotary and Centrifugal Pumps for the Paper Industry. F. Hoyer, Papierfabr. 24, 341-347 (June 6, 1926).—Various types of centrifugal pumps are illustrated and described.—J.L.P.

Turbine Pumps in the Paper Industry. F. Hoyer, Papierfabr. 24, 381-384 (June 20, 1926).—The use of high pressure centrifugal pumps in the paper industry is described.—J.L.P.

The High Pressure Brunn Turbine in the Paper and Pulp Industry. E. Balani. Papierfabr. 24, 350-355 (June 6, 1926).—The Brunn high pressure turbine of 120 atmospheres and 500 degrees C. superheating, yielding 26,000 horsepower, is described.—J.L.P.

The Terry Turbine for Paper Machine Drives. R. O. Muller. Paper Mill 49, No. 43, 22-26, 42, 44 (Oct. 23, 1926).—A brief historical summary of the development of the steam turbine, with a detailed description of the Terry turbine and of its application in the paper industry, particularly as a prime mover for paper machine drives.—A.P.-C.

Lubrication in the Paper Industry. J. Dayan. Papier 29, 947-948 (Sept., 1926).—In the case of bearings exposed to be splashed with water, the oil well is provided with a small vertical channel extending from the lowest point in the well to a height slightly below the normal oil level in the well. Any water entering in the well sinks to the bottom and is automatically removed through the channel by the weight of the overlying oil. As cotton wicks are liable to become soiled, to swell and finally break, they can be replaced by a short piece of brass or copper cable which gives much more uniform lubrication. Moreover, when the bearing becomes heated the cable conducts the heat to the oil, the fluidity of the latter increased and capillary absorption is automatically increased.—A.P.-C.

Recent Developments in Control Equipment W. C. Yates. Pulp and Paper 24, 1347-1348 (Nov. 11, 1926).—Brief outline of noteworthy advances made in the characteristics and features of control for the general run of motors necessary for the operation of the mill, e. g., for conveyors and pumps.—A.P.-C.

New Developments in Steam Turbines. Ernest Pragst. Pulp and Paper 24, 1317-1320 (Nov. 4, 1926).—Brief outline of the evolution of steam turbine design during the past 10 years.—A.P.-C.

Jessup and Moore's New Machine. Anon. Paper Mill 49, No. 47, 2, 6 (Nov. 20, 1926).—Description of the new Pusey and Jones machine for book, lithograph and other fine papers, recently installed at the Augustine Mills of the Jessup & Moore Co., Wilmington, Del.—A.P.-C.

Screen Equipment for Bleached Sulphite

SPECIAL INQUIRY No. 78

A member writes: "We manufacture 120 tons high grade bleached sulphite per day and as we have not sufficient screen capacity, propose to add to the screening department. At present we use Impco knotters with ¼ inch holes. We propose to pass the stock through coarse screens to remove heavy tailings then to existing flat screens with No. 9 and 10 cut plates, thence to rifflers, bleachers and bleach pulp screens.

1. "What is the best type of coarse screen to use on unbleached stock that is to be bleached, vertical or horizontal, centrifugal, rotary screens, or diaphragm screens?
2. "What is the number of screens and size of perforation or cut of plate recommended for the work on 120 tons per day?
3. "Will any of the centrifugal or rotary screens break these small knots or pieces of bark that have passed through the knotters?
4. "Is a second battery of knotters with finer holes recommended instead of the coarse screens?"

A transcript of the responses in the form of Special Report No. 78 will be sent to those contributing to the discussions. Replies should be sent to

W. G. MACNAUGHTON, Secretary TAPPI,
18 East 41st Street, New York, N. Y.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

Affiliated with

THE AMERICAN PAPER AND PULP ASSOCIATION

Conducted by THOS. J. BURKE, C.A., Sec-Treas

Labor Classification and Payroll Analysis*

By Carleton F. Brown, Vice-Pres., L. C. Smith & Corona Typewriters, Inc.

In the beginning, the practice of cost accounting tended to concern itself almost entirely with the determination of costs for the purpose of establishing the proper selling price or for checking with previously submitted estimates. The functions of the cost keeping department have within recent years, however, developed to such an extent as to almost subordinate its original objective to that of fact finding for control purposes. The cost accountant of today has, therefore, to concern himself more with the daily details and problems of management than was the case in the past, where certain data were periodically gathered together and presented to the management as a general summary of the factory's operations over a given period, or for a given lot of work.

May Have Occurred a Long Time Prior

All costs are the results of causes, many of which have occurred a long time prior to the determination of the cost. Each of these causes necessarily has its influence upon the final cost. and if these causes can be properly measured and their relative importance properly adjusted in advance, the management is in position to influence directly the final cost which will be given by the Cost Department. The natural and logical source of information concerning these problems is the Cost Department, and the cost accountant should have a proper conception of the problems of management, apart from the mere findings of costs, in order to perform his work most efficiently. He must constantly remember that cost finding and fact finding are two different things and in some cases have two different objectives. In the determination of facts it may frequently occur that the information so obtained and its bearing on factors in the business are not in direct line with the ascertainment of cost. For instance, the analysis of pay roll is entirely separate and distinct from its distribution and yet from a managerial standpoint the analysis from a fact-finding standpoint may be as important as distribution from the cost standpoint.

Most managers of business enterprises have the habit of speaking of productive and non-productive labor, but in so speaking are governed very largely, if not entirely, by the definitions of these terms heretofore laid down by cost accountants to suit the convenience or necessities of pay roll distribution for cost finding. In a very general sense the average manufacturer thinks of productive labor as that labor which works directly upon the product, and of non-productive as composed of all others, such as clerks, millwrights, firemen, and so forth Cost accountants, realizing that the terms "productive" and "non-productive" are not truly descriptive of the manner in which they distribute labor, have in certain instances used the terms "direct" and "indirect" as more or less synonymous with the older works and more truly indicative of the definitions which they give, productive or direct labor in general being defined as that labor which may be applied directly to the product, and non-productive or indirect that which cannot readily be so applied, but must be distributed over all processes of manufacture through burden charger.

There has been of late a tendency to take exception to the use of the words "productive" and "non-productive," but so far from a practical standpoint I have heard suggested no words which so clearly convey to the manufacturer the idea of these two divisions of his payroll as do these. However, it is after all not a question so much of words as of definitions. Unfortunately, we have apparently been unable to hit upon some commonly accepted rule by which we might divide our payroll into these two groups and still feel confident that our comparisons or our resulting ratios of whatsoever nature may be compared with corresponding figures of other manufacturers or industries or even with those of our own business over any extended period of years.

Definitions

At our Groton plant, where the Corona Typewriter is made, we have for several years past now used the following definitions:

The word "labor" is to be accepted in its broadest sense and includes every individual normal to manufacturing operations from the Works Manager or Superintendent down. Interpretation is equally true of the use of the word, "payroll." Methods of pay, whether by the hour, day, week or month, are ignored.

Productive Labor is that labor which involves physical effort of any nature whatsoever, which produces or tends to produce:—

1—Any change in raw material, finished or semi-finished parts or product in process of manufacture, as to form, character, quality or dimension of such material or product for the purpose of rendering such material or product useful, or preparing it for the subsequent processes or operations tending to ultimate usefulness. Such physical effort may be applied directly, or its application may be through the intermediation of power machinery or chemical or other processes.

2—Any change whereby a given piece of material, article or structure of any kind is:

A—Increased in value
B—Increased in usefulness
C—Maintained in a practical state of utility.

N. B. The term, "manufacture" refers to all processes commonly known in any industry as direct manufacturing processes

* From N. A. C. A. Bulletin.

and is not limited to the direct manufacturing processes of the particular industry in question.

We feel, however, that such a definition does not satisfactorily solve our entire problem with respect to labor classification. Nor is it to be hoped that any definition along these lines alone will do so. Because of the misleading character of the results obtained in all our own attempts to divide labor into two major groups, such as "productive" and "non-productive," we finally reached the conclusion that any such limited analysis would always be unsatisfactory and that other divisions are necessary—not sub-divisions of the major ones, but divisions along entirely different lines of cleavage. This second system of grouping comprises three divisions, and we have, because of the aptness of the words, dared to risk the displeasure of cost accountants by using the terms, "direct," "indirect," and "general" to classify them.

Direct Labor

Direct labor is that labor, whether productive or non-productive, which applies itself directly to the product, the manufacture of which is the primary purpose of the organization, or the labor of non-productive individuals or departments whose efforts are auxiliary to the productive processes of direct productive departments as sole beneficiaries.

Indirect Labor is that labor, productive or non-productive, essential to productive processes other than but supplemental to processes of direct labor.

General labor comprises all labor not falling wholly within one of the classifications, direct or indirect.

If the use of the words "Direct" and "Indirect" is seriously objected to, other words, such as manufacturing and supplementary might be substituted. Mr. William S. Kemp, while President of the Boston Chapter of the National Association of Cost Accountants, during the chapter year 1922-1923, delivered a series of very interesting talks to the Boston Chapter on the subject of departmental and standard costs. A part of his general plan was the dividing of all departments into two groups, productive and non-productive. Among the departments appearing in the productive or direct labor group are found, among others, packing, tool, development, and drafting. Mr. Kemp admits that in a measure these departments are non-productive or indirect labor departments, but he groups them in that manner for the purpose of giving them the same general overhead expenses as the direct labor departments, and says in support of the practice of giving them this burden change; "For instance, the tool making department has just the same kind of overhead expense while making tools, dies and so forth for us as it would have if the company were making these same tools and dies for sale." He also states that in the development department much of the work done is the manufacture of special articles for sale, and there should, therefore, be the same general application of expense burden to them as in the case of regularly manufactured products. Mr. Kemp is referring in his talks specifically to the system used in the Holtzer-Cabot Electric Company.

The inference to be drawn from the remarks made with respect to the tool making department and the development department would seem clearly to support the theory stated above with respect to the division of manufacturing activities into direct and indirect, and to substantiate the contention that the division of any business into two groups, such as "productive" and "non-productive," or whatever other names you choose to give them, is not sufficient, but that horizontal as well as vertical lines of demarcation must be used to secure a proper picture of our payroll. Mr. Kemp could easily differentiate his departments into Productive, Direct and Indirect, and Non-Productive, Direct and Indirect, and his Tool Room and similar departments could then be readily and logically placed without confusion. I wish to emphasize that such divisions of our labor or our pay roll are merely analytical and not at all distributory. Much of the money which we put into our manufacturing expense accounts never appears there as labor at all but is hidden in some expense items, and except through an analysis of the payroll we have no way of knowing to what extent each dollar of payroll is expended between the various labor activities of the enterprise.

Cost Accounting to Aid Production

That cost experts, in some cases at least, realize the necessity for reports covering payroll information of various kinds is evidenced by a very comprehensive article on "Cost Accounting to Aid Production" by G. Charter Harrison, appearing in "Industrial Management" in 1918. It emphasizes the necessity for a summarized payroll report showing, among other things, such items as:

1—Number of employees on roll.
2—Number of employees absent or working short hours, and total hours so lost.
3—Actual hours worked by operators.
4—Payroll of operators.
5—Average rate per hour of operators.
6—Hours worked other than by operators.
7—Payroll of employees other than operators.
8—Average rate per hour of such employees.
9—Total hours worked by all employees.
10—Average rate per hour earned by all employees.

Each of us, striving independently to prepare for ourselves reports of such a nature, might and probably would under absolutely identical conditions arrive at varying results because of the individual interpretations which each might put upon the classification of his employees. As a very broad picture of how information of this nature might be obtained, let me cite the following tabulation, which is purely arbitrary.

TABULATION

Total payroll	$100,000	100 %
A—Total productive payroll	61,600	61.6%
1—Production direct	58,200	58.2%
2—Production indirect	3,400	3.4%
B—Total non-productive payroll	38,400	38.4%
1—Non-production direct	21,500	21.5%
2—Non-production indirect	4,600	4.6%
3—Non-production general	12,300	12.3%
C—Total direct payroll	79,700	79.7%
Total indirect payroll	8,000	8.0%
Total general payroll	12,300	12.3%

These data might also be presented in terms of numbers of employees or of hours.

The same classification or analysis may be used in other ways by breaking down the non-productive activities into their various sub-divisions, such as supervision, clerical and miscellaneous. Such tabulations may be applied to the business as a whole, or, if so desired, to individual departments.

A Practical Illustration

As a practical illustration of the development of comparative labor data by departments, I might cite a report which we prepare, called "The Weekly Labor Analysis on Hourly Basis." This report applies solely to manufacturing or direct departments but could be modified to apply to supplementary or indirect departments. In developing this report, we were confronted with the difficulty of tying up labor analysis with labor distribution, as I have above defined the terms, by adhering strictly to the purely analytical method without any reference to distribution. We found the solution to this problem by the division of the productive labor into applied and unapplied labor, applied labor being that productive labor which the cost accountant would charge directly to the product, and unapplied labor that productive labor which he would charge to burden for convenience or because of his inability to make a direct charge of it.

In the illustration of this report, above, the first general section is entitled "Productive Labor" under this comes the subtitles of "Applied," "Unapplied" and "Set-Up," this last class being considered as productive labor. There are two classifications under applied: "Premium" and "Day Work"—in the case

L. C. SMITH & CORONA TYPEWRITERS, INC. WEEK ENDING NOVEMBER 6, 1926

WEEKLY LABOR ANALYSIS ON HOURLY BASIS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		Productive Labor							Non-Productive Labor										
		Applied																	
		Premium		Day work															
Dept. No.	Period	Time allowed	Time taken	Time allowed	Time taken	Unapplied	Set-up	Total	Supervision & clerical	Other	Total non-productive	Total payroll	Premium efficiency rating	Day work efficiency rating	Applied prod. hours on day work	Prod. hours on set-up	Payroll hours on non-productive	Premium hours lost from standard	Day work hours lost from standard
1	A	316.13	278.48	24.73	25.36	68.82	42.81	415.47	56.75	14.85	71.60	487.07	113.5%	97.5%	8.0%	10.3%	14.7%	9.65	.63
	B												112.6%	93.4%	7.5%	12.3%	13.8%		
2	A	230.43	187.15	29.14	28.66	....	5.73	221.54	15.46	....	15.46	237.00	123.1%	101.6%	13.0%	2.6%	6.5%	....	....
	B												124.7%	98.3%	12.4%	2.4%	7.1%		
3	A	692.96	573.65	46.45	44.06	87.00	53.11	757.82	67.50	18.65	86.15	843.97	120.8%	103.2%	7.0%	7.0%	10.2%	16.46	....
	B												118.2%	104.3%	8.3%	6.4%	9.8%		
4	A	.....	.....	215.65	341.05	22.10	11.20	374.35	51.50	8.15	59.65	434.00	.....	63.2%	100.0%	3.0%	13.8%	....	125.40
	B												.....	59.4%	100.0%	3.5%	14.4%		
5	A	199.91	138.38	44.91	47.83	307.10	8.75	502.06	54.65	21.94	76.59	578.65	144.5%	93.9%	25.6%	1.7%	13.1%	.09	2.92
	B												129.4%	98.7%	20.3%	1.9%	12.5%		
6	A	510.03	410.96	41.67	44.70	8.63	27.78	492.07	35.15	4.87	40.02	532.09	124.1%	93.2%	8.0%	5.6%	7.5%	12.02	3.03
	B												118.9%	95.5%	6.3%	4.9%	8.4%		
7	A	106.79	99.89	....	....	240.85	....	340.74	17.30	1.96	19.26	360.00	106.9%	.....	.0%	.0%	5.3%	1.26	....
	B												107.7%	.....	.0%	.0%	5.5%		
8	A	131.44	113.60	118.69	123.80	28.56	6.06	272.02	21.87	6.84	28.71	300.73	115.7%	95.8%	52.1%	2.2%	9.5%	2.04	5.11
	B												117.4%	91.3%	44.6%	2.7%	8.4%		
9	A	719.46	613.47	396.45	428.29	82.14	51.54	1175.44	73.45	14.21	87.66	1263.10	117.3%	92.5%	41.1%	4.4%	6.9%	17.74	31.84
	B												117.6%	94.1%	43.4%	3.9%	6.4%		
11	A	757.15	557.13	85.17	82.75	6.06	8.33	654.27	52.14	3.69	55.83	710.10	135.9%	102.9%	12.9%	1.3%	7.9%	4.64%	....
	B												129.7%	98.7%	11.5%	1.7%	8.4%		
27	A	14.74	10.93	737.84	718.50	83.57	....	813.00	50.00	....	50.00	863.00	133.9%	102.7%	98.5%	.0%	5.8%	....	...
	B												130.7%	99.5%	1.9%	.0%	6.4%		
28	A	1025.64	918.98	....	....	73.27	....	992.25	50.00	....	50.00	1042.25	111.6%	.....	.0%	.0%	4.8%	6.1%	....
	B												114.3%	.....	.0%	.0%	5.4%		
33	A	152.40	150.70	9.65	11.63	41.41	....	203.74	15.67	9.39	25.06	228.80	101.1%	82.9%	7.1%	.0%	10.9%	8.47	1.98
	B												112.8%	91.4%	10.3%	.0%	10.8%		
72	A	.....	.....	....	505.31	120.95	....	626.26	52.14	12.63	64.77	691.03	.....	.....	100.0%	.0%	9.4%	....	28.84
	B												.....	.....	100.0%	.0%	9.7%		
73	A	820.59	858.79	326.93	340.69	16.08	....	1215.56	51.15	3.87	55.02	1270.58	95.6%	95.9%	28.4%	.0%	4.3%	100.46	13.76
	B												107.3%	98.6%	10.8%	.0%	5.2%		
74	A	934.76	1239.30	614.59	653.48	48.11	....	1950.89	59.38	14.62	74.00	2024.89	75.4%	92.6%	34.8%	.0%	3.7%	213.91	48.89
	B												118.7%	103.5%	9.6%	.0%	4.1%		
75	A	424.38	460.34	.45	.48	141.12	2.74	604.68	61.39	21.54	82.93	687.61	92.2%	93.7%	.0%	.5%	12.1%	67.00	.03
	B												113.4%	91.3%	.3%	.2%	11.5%		
Total	A	7036.81	6611.75	2692.32	3406.59	1375.77	218.05	11612.16	785.50	157.11	942.61	12554.77	106.4%	93.0%	34.0%	1.9%	7.5%	459.75	262.43
	B												117.9%	94.1%	21.4%	2.2%	8.1%		

A—Equals this week.
B—Equals run average.

Copies to:
1—Vice President—Production. 3—Production Manager.
2—Factory Manager. 4—Time Study—Local.
5—Methods and Time Study—Main Office.

FORM 1

CONTENTS

1. Column No. 9=4+6+7+8
2. Column No. 12=10+11
3. Column No. 13=9+12
4. Column No. 14=3+4
5. Column No. 15=5+6
6. Column No. 16=6+(4+6)
7. Column No. 17=8+9
8. Column No. 18=12+13

of a plant operating under piece work system, piece work would be used in place of premium—"Premium" in this instance representing that portion of the productive labor which has been time-studied and upon which the operators work under a wage incentive plan. "Day Work" in this instance represents that portion of productive labor which, while being as direct in its application as premium work, has not been time-studied and therefore cannot be worked upon under the wage incentive system, but must be paid for by the straight day work method of wage payment.

Divided Into Two Sections

On this report each department is divided into two sections, one indicating the activities for the current week, as indicated by the letter "A", and the second, the running average, as indicated by the letter "B." This, of course, is to allow for a better comparison of the week's work.

In column 3, under the Premium Section, is shown the number of hours of time allowed for the product which has been produced in the department on premium.

Column 4 shows the actual number of hours taken to produce the product.

Under column 5, in the Day Work Section, is shown the hours of time allowed for work produced in this department on day work. While this class of work as has been stated, has not been time studied and placed upon wage incentive, it is, however, estimated, first, for the purpose of setting standards for standard costs, and second, so that a measurement of efficiency can be obtained on day work operations. Estimates are not set at full 100 per cent possibilities, however, because it is not expected that a day work operator will produce at the same degree of efficiency as will an operator working on premium. Therefore, the standard as set on day work represents about 80 per cent of the standard as established for premium.

In column 7 is shown the total number of unapplied hours, as previously defined. This labor, although productive in its character, cannot be applied directly to the product, through inability to establish standards upon it or conveniently to distribute it directly to the product. In the Punch Press Department, for instance, are several classes of work which are general in character, barrel tumbling of parts as they come from the presses for the purpose of removing burrs or brightening being one of these. Surely this is productive labor, since the work upon the parts is just as essential to the ultimate use of the parts as is the actual blanking or forming of the parts themselves. However, inasmuch as the operator of the tumbling barrels may be working upon 12 or 15 barrels simultaneously, each containing different parts, it is most inconvenient, although not impossible, to set up standards of measurement upon his work, and it is, therefore, much more practical and inexpensive to charge his time to a fixed expense account such as "Unapplied Productive Labor."

"Set-Up-Labor" as represented in Column 8 is considered as productive labor from the standpoint of labor analysis, but is non-productive labor from the standpoint of the cost system

because of the variation of time required for setting up machines and the varying conditions surrounding different set-ups on the same part. In some plants where set-up has been time-studied and incentive rates established, it is quite proper to consider it as a regular operation and as applied productive labor.

Column 9 shows the total productive hours worked by the department, and is made up of the totals of columns 4, 6, 7 and 8.

Column 10 of the Non-Productive Section is self-explanatory.

Column 11 of that section is used to show covr time ond over-time on the part of operators and miscellaneous time spent around the department on non-productive work.

Columns 12 and 13 are self-explanatory.

Column 14, headed "Premium Efficiency Rating" is the departmental efficiency of the work which has been performed on premium. This is determined by dividing time allowed, as shown under column 3, by time taken, as shown under column 4.

Column 15, headed "Day Work Efficiency Record," is the record of the departmental efficiency on that class of work, and is determined by dividing the time allowed on day work, as shown under column 5, by time taken, as shown under column 6. The information shown under these two columns is of course, quite important, inasmuch as it gives a direct check upon the departmental foreman in the handling of their operators, and it also gives the General Manager a check upon the Factory Manager as to his ability to keep the departments producing at a satisfactory efficiency.

Column 16 represents the number of hours time taken on day work as a percentage of the total number of hours of time taken of applied productive labor in the department, or in other words, Column 6, divided by Columns 4 plus 6. This figure should be watched very closely, and constant pressure brought to bear upon the time study division for release of all possible day work operations to premium, inasmuch as the plant suffers through inefficiency as long as productive labor remains on day work.

In Column 17 is shown the percentage which set-up labor is of the total hours of productive labor, and is secured by a division of Column 8 by Column 9. It is important as a control factor upon the planning of the production department, the efficiency of tool inspection, breakage of tools, and even of tool design.

Column 18 indicates the percentage of non-productive labor to total payroll and is secured by dividing Column 12 by Column 13. This figure is important because of the indication it gives of the trend of the labor element of overhead in the department.

Column 19 represents the extent to which operators have fallen below the 100 per cent standard of production set by the time study. Under the 100 per cent premium plan this is important as the amount lost indicates a direct loss in dollars, or, in other words, an increase in cost in the applied productive labor of that department. This would not be true when piece work is paid unless as with Kemp, day rates are guaranteed.

Column 20 shows the hours lost from day work standards, and is represented by the difference between time allowed and time taken on applied day work productive labor: i. e., Column 6 minus Column 5.

Complete Summation

This particular report sums up on one sheet the labor activities of the entire direct productive or manufacturing departments, and is used by both the general management and factory management as a guide to the control of all manufacturing processes. The details of these figures are given periodically to those in charge of the operating departments so that they have first hand information through which they can secure direct control of their respective departments. The executive in charge of production uses this report as a check on the factory manager, inasmuch as by careful study from week to week, he can follow very definitely the trend of labor conditions in the plant.

It is my opinion that analyses, such as those suggested, or others of a similar nature which might be developed, are of great benefit to the general management and the plant manager. Data are promptly and periodically supplied, which perhaps have never been available in the past under the cost method of labor distribution. In my own experience I have frequently struggled with the complexities of the activities of plant personnel as partially represented by the direct labor pay-roll and partially by the non-productive labor shown in the manufacturing expense report, and rarely, if ever, with satisfactory results.

This labor analysis report, combined with others controlling the indirect or supplementary departments, affords the executive a complete picture of the general activities of all plant employees. Their detailed activities may be secured where any group seems out of line, and all this without recourse to the manufacturing expense report in which non-productive labor is buried, both under its own terminology and under other expense titles as well.

Time Allowed

I wish now to refer back to one term which I have used, with respect to the weekly labor analysis which I have just discussed. The term is "time allowed." As a matter of fact, we are more accustomed to using the words "Standard Hour" when speaking of the figures found in the time allowed column.

About a year ago we decided to install a Standard Cost System, and we were fortunate in securing for this work one of your former presidents, Mr. R. W. Darnell. As a result of the work upon standard costs and time allowed, there developed not only the standard hour but certain uses of the standard hour, which I believe may be interesting to you and which have a certain bearing upon the subject of this paper .

Production changes have usually been measured by accountants and production men by the productive hour, on the assumption that production would increase or decrease more or less in direct proportion with the increase or decrease of the production hours. This assumption cannot be accepted as accurate. For instance, when increasing the force, productive hours necessarily increase but due to lack of skill on the part of new operators, production does not increase proportionately, and the contrary is the case when there is a decrease in production, since it is customary to lay off the least efficient operators, which results in a decrease of productive hours out of proportion to the decrease in production. Productive hours do not take into consideration the efficiency of the operators. Two operators working the same number of hours may produce widely divergent results.

In setting rates for use in wage incentive systems, regardless of the system, time allowed to complete the task must first be determined, to be converted later into piece rates on a piece work system, and as task time in systems based on time only. The rates as set represent 100 per cent efficiency on the part of the operator where he equals the standard in his performance, that is, 100 per cent is the rate or standard as established by the company. This does not mean that he may not produce at a rate greater or less than the established 100 per cent. As a matter of fact rates are so set that it is expected that the better operators will materially exceed this.

Standard Hour

From the wage incentive rates we have developed a unit of measure which we call the "Standard Hour." Wage incentive rates established under a system based upon time are ordinarily expressed in time allowed per piece. The Standard Hour is a measure of the amount of work which should be accomplished in one hour, using time allowed as a basis.

The element of time being a constant factor, the standard hour becomes a constant unit of measurement of performance. For instance, an operator is put to work on a task which requires 10

working hours for him to complete. Therefore 12 standard hours represents his production and not the 10 working hours he has taken to accomplish the task. He may have taken 8, 9, 10, 11, 12, or even 13 hours at his work, and still only have produced the same quantity of product. It is what he produces in the hours worked that is important and not the hours worked. What is true of individual operators is also true of specific departments and the plant as a whole.

It has been difficult in the past to measure the work of a department doing a great variety of work where nothing is complete in itself, but only has given operations performed upon the product. By using the standard hour as a measuring stick, an exact knowledge is obtained of just what the department is producing. The standard hour is used, as a unit of measurement of the efficiency of operators and departmental and plant efficiency records as illustrated in the Weekly Labor Analysis, and of the production of the various manufacturing departments, as well as means for the control of inventories. It is impossible to cover specifically all the uses of the Standard Hour as we use it in the control of our manufacturing but I would like to take the time to illustrate its use in the control of man power and machine tool equipment.

Forms 2 and 3

As a means of presenting this more clearly, I have shown two forms, 2 and 3, and one entitled, "Summary of Standard Productive Hours by Departments" and the other "Summary of Standard Productive Hours by Machine Group."

SUMMARY OF STANDARD PRODUCTIVE HOURS

By Department

L. C. Smith & Corona Typewriters, Inc.

Dept. Name ..... Dept. No. .....

Name of Product	Standard Hours per Unit	Yearly Production Schedule	Total Std. Hours Required
CORONA MODEL			
No. 3—28 key	.....	.....	.....
No. 3—30 key	.....	.....	.....
No. 3—30 key(Dead)	.....	.....	.....
No. 3—30 key (Yiddish)	.....	.....	.....
No. 4—42 key	.....	.....	.....
	.....	.....	.....
	.....	.....	.....
Adding Mach.—Black	.....	.....	.....
Adding Mach.—Krakalack	.....	.....	.....
	.....	.....	.....
Typewriter Case—Model No. 3	.....	.....	.....
Typewriter Case—Model No. 4	.....	.....	.....
	.....	.....	.....
Standard hours required	.....	.....	.....
Efficiency loss or gain %	.....	.....	.....
Plus set-up time %	.....	.....	.....
Plus repairs, idle time, etc., %	.....	.....	.....
Plus lost time of operators %	.....	.....	.....
Total man hours required	.....	.....	.....
Standard working hours per year	.....	.....	.....
Standard number operators required	.....	.....	.....

FORM 2

SUMMARY OF STANDARD PRODUCTIVE HOURS

By Machine Group

L. C. Smith & Corona Typewriters, Inc.

GROUP NAME

Dept. Name ..... Dept. No. .....

Group Name ..... Number of Machines .....

Date .....

Name of Product	Standard Hours per Unit	Yearly Production Schedule	Total Std. Hours Required
CORONA MODEL			
No. 3—28 key	.....	.....	.....
No. 3—30 key	.....	.....	.....
No. 3—30 key (Dead)	.....	.....	.....
No. 3—30 key (Yiddish)	.....	.....	.....
No. 4—42 key	.....	.....	.....
	.....	.....	.....
	.....	.....	.....
Adding Mach.—Black	.....	.....	.....
Adding mach.—Krakalack	.....	.....	.....
	.....	.....	.....
Typewriter Case—Model No. 3	.....	.....	.....
Typewriter Case—Model No. 4	.....	.....	.....
	.....	.....	.....
Standard hours required	.....	.....	.....
Efficiency loss or gain	.....	.....	.....
Plus set-up time	.....	.....	.....
Plus machine breakdown	.....	.....	.....
Plus other lost time of machinery	.....	.....	.....
Total machine capacity required	.....	.....	.....
Machine capacity available (2500 hrs. × no. mach.)	.....	.....	.....
Surplus or inadequate capacity	.....	.....	.....

FORM 3

In the Summary of Standard Productive Hours by Department, you will observe that there is a column headed "Standard Hours per Unit," another "Yearly Production Schedule," and the third "Total Standard Hours Required." The various products manufactured by the organization are listed on the side and the standard hours per article or unit entered opposite each article. In the second column would appear the production schedule for the year, and in the third column would be entered the product of the first two. From the summation of the third column we would obtain the total number of standard hours required for all these production schedules. It is apparent, however, that the actual number of productive hours required may be greater or less than the standard hours determined. The standard hours required shown thus far are based upon the assumption that all operators will produce at 100 per cent efficiency because standard hours are represented at 100 per cent efficiency. However, it is seldom, if ever, the case that a department will operate at an even 100 per cent efficiency. An efficiency ranging from 90 per cent to 110 per cent or possibly 115 per cent is more likely to be the case. In the event that a department under consideration produces at 90 per cent efficiency, it will require approximately 11 per cent more time to produce the product outlined in the production schedule than is shown under the standard hours required. On the other hand, if a department has an efficiency rating of 110 per cent, it will require approximately 9 per cent less time to produce this schedule, as indicated by the standard hours required. Therefore, in order to arrive at the actual hours required to produce the schedule, it is necessary to take into consideration this element of efficiency of operators, either adding or subtracting, as the case may be, the variable produced by the efficiency rating. Another element of variation from the standard hours required is the amount of set-up time which will be expended during the year to set up the various operations which have been assigned to the department. In the same way the other items are determined as influencing the number of productive hours required in the department.

By adding, then, these various elements to standard hours required, the total man hours required to operate the department is obtained. The number of hours to be worked throughout the year being known, the number of operators required in the department for the given production is easily obtained by dividing the working hours per year into the total man hours required.

This same method and substantially the same form may be used for determining the total machine capacity required, and since the machine capacity available is a known factor, there results a surplus or inadequate machine capacity as the case may be.

None of these data which we obtain is in any way essential to cost keeping, but they are of considerable importance to the executives in analyzing labor and machine conditions in their plants. Intelligent use of these data should tend to minimize labor turnover, due to foremen hiring or firing workers unnecessarily because of the rather limited horizon which they possess as to the requirements of their department. It would also assist the factory executives in determining more exactly what departments are over or under-manned, and to what extent they should be reduced or enlarged in accordance with the future possibilities of work in the department, as well as to enable them to move operators from one department to another to stabilize and balance production. Use of these data will also eliminate the possibility of unnecessary outlay of capital for machine equipment which would not be used to justify the expenditure.

Further uses of the standard hour which suggest themselves are: 1—The measurement of production through any department in terms of units of finished product, and (2) Control of in-process and finished parts inventories by resolving all parts into valuation by standard hours.

By referring back to the form "Summary of Standard Pro-

(Continued on page 50)

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JUNE 25, 1927

SUMMARY

Cigarette paper .....80 cs.
Wall paper .....27 bls., 6 cs.
Paper hangings .....10 bls., 8 cs.
Hanging paper .....11 cs.
News print .....3,723 rolls
Printing paper .....190 rolls, 55 cs.
Wrapping paper .....49 rolls, 16 cs.
Packing paper .....56 bls., 2 rolls
Sulphate paper .....342 rolls
Drawing paper .....37 cs.
Filter paper .....45 bls., 96 cs.
Colored paper .....4 cs.
Bowl paper .....8 bls.
Writing paper .....3 cs.
Screen paper .....9 cs.
Painted paper .....6 cs.
Parchment paper .....42 rolls, 5 cs.
Muslin paper .....2 cs.
Tissue paper envelopes .....14 cs.
Metal paper .....39 cs.
Surface coated paper .....137 cs.
Gold coated paper .....7 cs.
Stencil paper .....26 cs.
Decalcomania paper .....21 cs.
Wall board .....42 cs.
Paper tubes .....20 cs.
Straw board .....240 rolls
Miscellaneous paper.....97 rolls, 7 bls., 176 cs.

CIGARETTE PAPER

Standard Products Corp., McKeesport, Havre, 80 cs.

WALL PAPER

F. J. Emmerich, Westphalia, Hamburg, 26 bls., 4 cs.
A. C. Dodman, Jr., Inc., Majestic, Southampton, 1 bale.
A. C. Dodman, Jr., Inc., Berengaria, Southampton, 1 cs.
Keller Dorian Paper Co., Berengaria, Southampton, 2 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Minnekahda, London, 6 bls., 4 cs.
A. C. Dodman, Jr., Inc., Baltic, Liverpool, 4 bls.
Whiting & Patterson Co., Inc., Majestic, Southampton, 1 cs.
Whiting & Patterson Co., Inc., Berengaria, Southampton, 3 cs.

HANGING PAPER

Hensel, Bruckman & Lorbacher, Paris, Havre, 11 cs.

NEWS PRINT

The Times Co., Drottningholm, Gothenburg, 79 rolls.
M. Gottesman & Co., Inc., Drottningholm, Gothenburg, 226 rolls.
N. Y. Times, Corner Brook, Corner Brook, 2,565 rolls.
Parsons & Whittemore, Inc., Republic, Bremen, 530 rolls.
A. S. Zabriskie, Republic, Bremen, 93 rolls.
Journal of Commerce, Sulina, Kotka, 230 rolls.

PRINTING PAPER

P. C. Zuhlke, Belgenland, Antwerp, 18 cs.
Keuffel & Esser, Westphalia, Hamburg, 71 rolls.
E. Dietzgen & Co., Ryndam, Rotterdam, 21 cs.
Walker, Goulard & Plehn, Republic, Bremen, 119 rolls.
National City Bank, Republic, Bremen, 16 cs.

WRAPPING PAPER

Steffens, Jones Co., Belgenland, Antwerp, 2 cs.
Birn & Wachenheim, Belgenland, Antwerp, 14 cs.
Blauvelt Wiley Paper Manfg. Co., Drottningholm, Gothenburg, 49 rolls.

PACKING PAPER

Steiner Paper Corp., Stavangerfjord, Greaker, 56 bls.
Arkell Safety Bag Co., Stavangerfjord, Oslo, 2 rolls.

SULPHATE PAPER

Insight Paper Co., Stavangerfjord, Frederickstad, 342 rolls.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Minnekahda, London, 2 cs.
Keuffel & Esser, Westphalia, Hamburg, 35 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Minnekahda, London, 15 cs.
H. Reeve Angel & Co., Inc., Majestic, Southampton, 25 bls., 3 cs.
A. Giese & Son, Majestic, Southampton, 20 bls.
E. Fougera & Co., Chicago, Bordeaux, 77 cs.
F. Henjes, Jr., Republic, Bremen, 1 cs.

COLORED PAPER

C. W. Williams, Belgenland, Antwerp, 4 cs.

BOWL PAPER

C. A. Johnson & Co., Baltic, Liverpool, 8 bls.

WRITING PAPER

J. E. Bernard & Co., Majestic, Southampton, 1 cs.
J. Kennedy, Paris, Havre, 1 cs.
R. F. Downing & Co., Berengaria, Southampton, 1 cs.

SCREEN PAPER

American Express Co., Paris, Havre, 9 cs.

PAINTED PAPER

Keller Dorian Paper Co., Paris, Havre, 6 cs.

PARCHMENT PAPER

F. W. Peterschen, Ryndam, Rotterdam, 42 rolls, 5 cs.

MUSLIN PAPER

Keller Dorian Paper Co., Berengaria, Southampton, 2 cs.

TISSUE PAPER ENVELOPES

J. B. Mast & Co., G. Verdi, Genoa, 14 cs.

METAL PAPER

Hensel, Bruckman & Lorbacher, Sierra Ventana, Bremen, 13 cs.
Hensel, Bruckman & Lorbacher, Republic, Bremen, 26 cs.

SURFACE COATED PAPER

P. C. Zuhlke, Belgenland, Antwerp, 58 cs.
Gevaert Co. of America, Belgenland, Antwerp, 49 cs.
Whiting & Patterson Co., Inc., Westphalia, Hamburg, 13 cs.
W. von Doorn, Ryndam, Rotterdam, 17 cs.

GOLD COATED PAPER

F. Murray Hill, Pr. Roosevelt, Bremen, 7 cs.

STENCIL PAPER

Arlac Dry Stencil Co., Westphalia, Hamburg, 26 cs.

DECALCOMANIA PAPER

C. W. Sellers, Westphalia, Hamburg, 6 cs.
C. W. Sellers, Pr. Roosevelt, Bremen, 3 cs.
L. A. Consmiller, Pr. Roosevelt, Bremen, 12 cs.

TRACING PAPER

Keuffel & Esser, Westphalia, Hamburg, 1 cs.

WALL BOARD

O. M. Baxter, Inc., Drottningholm, Gothenburg, 42 cs.

PAPER TUBES

H. de Maguinn, Paris, Havre, 20 cs.

STRAW BOARD

R. Wilson Paper Corp., Ryndam, Rotterdam, 80 rolls.
Grand Corrugated Paper Corp., Ryndam, Rotterdam, 160 rolls.

MISCELLANEOUS PAPER

Heemsoth, Basse & Co., Belgenland, Antwerp, 24 cs.
Japan Paper Co., G. Verdi, Genoa, 52 cs.
J. Henschel & Co., Westphalia, Hamburg, 10 cs.
C. S. Brown Paper Corp., Drottningholm, Gothenburg, 7 bls.
Arkell Safety Bag Co., Drottningholm, Gothenburg, 97 rolls.
H. Reeve Angel & Co., Inc., Drottningholm, Gothenburg, 13 cs.
Japan Paper Co., Drittningholm, Gothenburg, 3 cs.
E. H. Sargent & Co., Drottningholm, Gothenburg, 4 cs.
Standard Products Corp., Paris, Havre, 60 cs.
D. C. Andrews & Co., Paris, Havre, 3 cs.
Japan Paper Co., Paris, Havre, 1 cs.
Kolesch & Co., Innoko, Rotterdam, 4 cs.
G. W. Sheldon & Co., Berengaria, Southampton, 2 cs.

RAGS, BAGGINGS, ETC.

N. Y. Trust Co., S. Ventana, Bremen, 33 bls. bagging.
J. R. Lyman Co., Tomalva, Antwerp, 24 bls. rags.
Whaling Waste Products Co., Tomalva, Antwerp, 60 bls. flax waste.
E. J. Keller Co., Inc., Tomalva, Antwerp, 48 bls. rags.
Central Union Trust Co., Nobles, Genoa, 71 coils paper stock.
Castle & Overton, Inc., Carmania, Liverpool, 50 bls. rags.
Castle & Overton, Inc., Montana, Havre, 111 bls. bagging.
Corn Exchange Bank, Montana, Havre, 27 bls. rags.
Ayres-W. C. Jones Co., Montana, Havre, 80 bls. cotton waste.
C. R. Spence & Co., McKeesport, Dunkirk, 282 bls. rags.
V. Galaup, McKeesport, Havre, 93 bls. rags.
W. Steck & Co., McKeesport, Havre, 340 bls. jute waste.
Castle & Overton, Inc., Muenchen, Bremen, 60 bls. rags.
Castle & Overton, Inc., Incemore, Scotland, 106 bls. jute waste.
Castle & Overton, Inc., Incemore, Scotland, 17 bls. rags.
Castle & Overton, Inc., Kifuku Maru, Hamburg, 106 bls. bagging.
E. J. Keller Co., Inc., Incemore, ——, 126 bls. rags.
E. J. Keller Co., Inc., Taiho Maru, ——, 190 bls. rags.

OLD ROPE

American Exchange Irving Trust Co., S. Ventana, Bremen, 49 coils, 8 bls.
Brown Bros. & Co., Ryndam, Rotterdam, 70 bls.
Brown Bros. & Co., Chicago City, Bristol, 76 coils.
E. J. Keller Co., Inc., Incemore, ——, 91 bls.

MANILA ROPE

Ellermans' Wilson Line, Minnekahda, London, 68 coils.

WOOD PULP

Chemical National Bank, Stavangerfjord, Oslo, 800 bls. sulphite.
Castle & Overton, Inc., S. Ventana, Bremen, 1,094 bls. wood pulp.
D. M. Hicks, Inc., Tomalva, Antwerp, 109 bls. wood pulp, 15 tons.
Chemical National Bank, Westphalia, Hamburg, 128 bls. sulphite, 25 tons.
Castle & Overton, Inc., Muenchen, Bremen, 80 bls. wood pulp.

WOOD PULP BOARDS

Fibre Case & Novelty Co., Drottningholm, Gothenburg, 62 bls.
Lagerloef Trading Co., Republic, Bremen, 236 bls., 33 tons.

WOOD FLOUR

State Chemical Co., Innoko, Rotterdam, 586 bags, 33,720 kilos.

CASEIN

Atterbury Bros., Inc., Brazilian Prince, Buenos Aires, 834 bags, 110,318 lbs.
National City Bank, Brazilian Prince, Buenos Aires, 834 bags, 50,040 kilos.
T. M. Duche & Sons, Brazilian Prince, Buenos Aires, 417 bags, 25,020 kilos.
American Exchange Irving Trust Co., Brazilian Prince, Buenos Aires, 500 bags, 30,000 kilos.
Kalbfleisch Corp., Southern Cross, Buenos Aires, 1,834 bags.
Atterbury Bros., Inc., McKeesport, Havre, 150 bags, 15,070 kilos.

BALTIMORE IMPORTS

WEEK ENDING JUNE 25, 1927

Castle & Overton, Inc., Montana, Havre, 52 bls. bagging.
National City Bank, Montana, Havre, 656 bls. rags, 268 bls. bagging.
Congoleum Nairn Co., McKeesport, Havre, 288 bls. bagging.
Congoleum Nairn Co., McKeesport, Havre, 766 bls. rags.
Congoleum Nairn Co., McKeesport, Dunkirk, 665 bls. rags.
V. Galaup, McKeesport, Dunkirk, 18 bls. rags.
Bulkley, Dunton & Co., Binnendyk, ——, 140 bls. wood pulp.
Bulkley, Dunton & Co., Brosund, ——, 6,325 bls. wood pulp.
Bulkley, Dunton & Co., West Eldard, ——, 600 bls. wood pulp.
Buck, Kiaer & Co., Inc., Florida, Oslo, 2,680 bls. sulphite.
E. J. Keller Co., Inc., Binnendyk, Karlsruhe, 675 bls. wood pulp.
Castle & Overton, Inc., Derfflinger, Germany, 3,808 bls. wood pulp.

(Continued on page 56)

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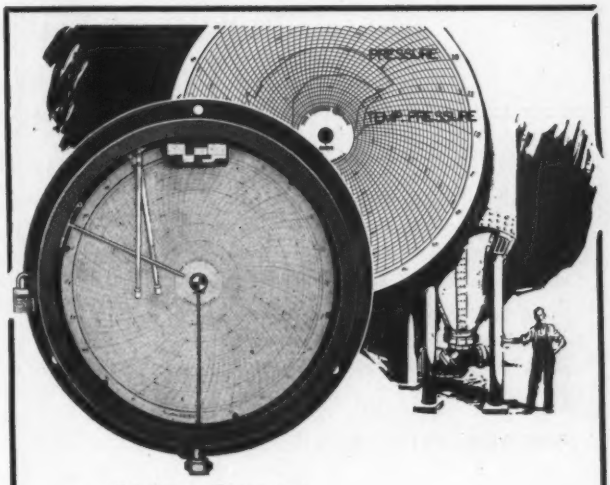

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FOXBORO

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THE COMPASS OF INDUSTRY

Imports of Paper and Paper Stock

(*Continued from page 54*)

NEW ORLEANS IMPORTS

WEEK ENDING JUNE 25, 1927

E. J. Keller Co., Inc., E. Luckenbach, ——, 450 bls. gunny.
E. J. Keller Co., Inc., E. Luckenbach, ——, 60 bls. rags.
Castle & Overton, Inc., Anatola, Germany, 16 bls. rags.
Castle & Overton, Inc., Leerdam, Holland, 3 bls. rags.
Castle & Overton, Inc., Polybius, England, 256 bls. rags.
Castle & Overton, Inc., Carplaka, France, 62 bls. rags.
Castle & Overton, Inc., ——, Japan, 100 bls. rags.

PHILADELPHIA IMPORTS

WEEK ENDING JUNE 25, 1927

D. I. Murphy, Tomalva, Antwerp, 200 bls. rags.
Castle & Overton, Inc., Tomalva, Antwerp, 594 bls. rags.
M. Friedman, Tomalva, Antwerp, 47 bls. rags.
E. A. Stone & Co., Tomalva, Antwerp, 119 bls. paper.
J. L. Shoemaker & Co., Tomalva, Antwerp, 9 cs. rags.
Paper Service Co., Tomalva, Antwerp, 48 cs. paper.
Castle & Overton, Inc., Nobles, Marseilles, 255 bls. rags.
Congoleum Nairn Co., Nobles, Leghorn, 96 bls. rags.
Union National Bank, Nobles, Genoa, 208 coils rope.
D. I. Murphy, C. S. Maria, Coruna, 45 bls. rope.
Chemical National Bank, Bankdale, Barcelona, 93 bls. rags.
Union National Bank, Bankdale, Barcelona, 79 bls. rags.
Equitable Trust Co., Bankdale, Barcelona, 90 bls. rags.
Philadelphia Bulletin, Corner Brook, Corner Brook, 2,330 rolls news print.
Paper House of Penna., Corner Brook, Corner Brook, 2,330 rolls news print.
Baltimore Star, Corner Brook, Corner Brook, 357 rolls news print.
Chase National Bank, Chicago City, Bristol, 119 bls. rags.
Chase National Bank, Chicago City, Bristol, 69 coils old rope.
Castle & Overton, Inc., Innoko, Rotterdam, 240 bls. rags.
A. Hurst & Co., Montana, Havre, 206 bls. rags.
Central Mercantile Bank, Montana, Havre, 117 bls. rags.
J. H. Whitwell, Montana, Havre, 2 cs. painted paper.
Bulkley, Dunton & Co., Montana, ——, 123 bls. rags.
W. Schall & Co., Montana, Havre, 48 bls. rags.
Stephano Bros., Montana, Havre, 15 cs. cigarette paper.
Castle & Overton, Inc., Montana, Havre, 508 bls. rags.
Brown Bros. & Co., Montana, Havre, 47 bls. rags.
Southwark National Bank, Montana, Havre, 41 bls. rags.
A. Hurst & Co., Montana, Dunkirk, 47 bls. rags.
D. S. Walton & Co., Sulina, Gothenburg, 64 rolls, 4 bls. wrapping paper.
J. Anderson & Co., Sulina, Gothenburg, 250 bls. sulphite.
E. M. Sergeant & Co., Sulina, Gothenburg, 1,687 bls. dry soda pulp.
J. A. Steer & Co., Sulina, Gothenburg, 98 bls. rope.
E. J. Keller Co., Inc., Manchester Importer, Manchester, 144 bls. bagging.
Bulkley, Dunton & Co., Binnendyk, ——, 65 bls. rags.
Bulkley, Dunton & Co., Blydendyk, ——, 12 bls. rags.
Buck, Kiaer & Co., Inc., Florida, Oslo, 1,600 bls. kraft pulp.
Buck, Kiaer & Co., Inc., Schenectady, Obbola, 7,000 bls. kraft pulp.
E. J. Keller Co., Inc., Pipestone County, Havre, 208 bls. rags.
E. J. Keller Co., Inc., M. Dollar, ——, 160 bls. rags.
Castle & Overton, Inc., Goettingen, Germany, 86 bls. rags.
Castle & Overton, Inc., Blydendyk, Holland, 48 bls. rags.
Castle & Overton, Inc., Wheatmore, Scotland, 167 bls. rags.
Castle & Overton, Inc., Devonian, England, 101 bls. rags.
Castle & Overton, Inc., Incemore, Scotland, 120 bls. rags.
Castle & Overton, Inc., Pipestone County, France, 756 bls. rags.
Castle & Overton, Inc., Darian, England, 229 bls. rags.
Castle & Overton, Inc., Dendarah, Germany, 75 bls. rags.
Castle & Overton, Inc., Progress, Denmark, 177 bls. rags.
Castle & Overton, Inc., Southwestern Miller, London, 117 bls. rags.
Castle & Overton, Inc., Quaker City, England, 508 bls. rags.
Castle & Overton, Inc., Derrflinger, Germany, 48 bls. rags.
Castle & Overton, Inc., Derrflinger, Germany, 1,274 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING JUNE 25, 1927

Atterbury Bros., Inc., Brazilian Prince, Buenos Aires, 1,251 bags casein, 75,060 kilos.
1st National Bank of Boston, Brazilian Prince, Buenos Aires, 834 bags casein, 50,040 kilos.
T. M. Duche & Sons, Brazilian Prince, Buenos Aires, 834 bags casein, 50,040 kilos.
Buck, Kiaer & Co., Inc., Sulina, Stockholm, 108 bls. wood pulp.
The Borregaard Co., Inc., Sulina, Gothenburg, 2,000 bls. wood pulp.
J. Anderson & Co., Sulina, Gothenburg, 2,750 bls. sulphite.
E. M. Sergeant & Co., Sulina, Gothenburg, 150 bls. dry soda pulp.
Beech Nut Packing Co., Sulina, Gothenburg, 202 rolls wrapping paper.
G. F. Malcolm, Samaria, Liverpool, 5 cs. tissue paper.
E. J. Keller Co., Inc., Pipestone County, Havre, 136 bls. rags.
Bulkley, Dunton & Co., Binnendyk, ——, 138 bls. wood pulp.
Bulkley, Dunton & Co., West Harcuvar, ——, 125 bls. wood pulp.
Bulkley, Dunton & Co., Nils, ——, 60 bls. rags.
Buck, Kiaer & Co., Inc., Florida, Oslo, 3,600 bls. sulphite.
Buck, Kiaer & Co., Inc., Louisiana, Oslo, 200 bls. sulphite.

NORFOLK IMPORTS

WEEK ENDING JUNE 25, 1927

Norfolk Despatch, Corner Brook, Corner Brook, 1,323 rolls news print.
Portsmouth Star, Corner Brook, Corner Brook, 113 rolls news print.
Norfolk Times, Corner Brook, Corner Brook, 667 rolls news print.
Knoxville News, Corner Brook, Corner Brook, 188 rolls news print.
Norfolk Pilot, Corner Brook, Corner Brook, 433 rolls news print.
Bank of Montreal, Corner Brook, Corner Brook, 615 rolls news print.
Buck, Kiaer & Co., Inc., Louisiana, Oslo, 400 bls .sulphite.

Pulp Production Charts Nearly Ready

The United States Pulp Producers Association is cooperating actively with the American Paper and Pulp Association in a comprehensive study of the pulp situation, the results of which are being developed in a series of charts covering domestic production, consumption, imports, etc. It is expected that these charts will be available for distribution to members of these associations about July 1.

Canadian Technical Meeting Successful

The summer meeting of the Technical Section of the Canadian Pulp and Paper Association was held last week and proved highly successful. Approximately fifty members and guests attended and were entertained royally right along the line. The complete program follows:

Leaving Quebec on Monday, June 20, the party arrived at Saguenay Power Junction the following morning and breakfasted at the Staff House of Price Bros. & Co. The Riverbend Mill was afterwards inspected. Following the luncheon, the party motored to Isle Maligne and then to Lake St. John for a short trip on the lake. Supper was provided at one of Price Bros. camps.

On the following day, Wednesday, the party arrived at Kenogami and after breakfast inspected the Kenogami mill. Following the luncheon, the plant of the Aluminum Company at Arvida was visited. An informal dinner was enjoyed at Kenogami followed by an excellent entertainment.

On Thursday, June 23, the party left for Chicoutimi to inspect the Quebec Pulp and Paper Mills plant and then journeyed to Port Alfred by motor for luncheon, as guests of the Port Alfred Pulp and Paper Corporation. After inspecting the Port Alfred mills, the party returned to Chicoutimi for dinner as guests of the Quebec Pulp and Paper Mills, Ltd. On the following morning the party sailed from Chicoutimi aboard the steamer *Cape Diamond* on the return journey to Quebec.

Wolf Envelope Co. Expands

[FROM OUR REGULAR CORRESPONDENT]

CLEVELAND, Ohio, June 27, 1927.—Five years ago the Wolf Envelope Company, operating factories here and in Detroit, added envelope machines of a new type, each replacing two old style machines and producing 150 envelopes a minute. Now a new machine has been installed producing 300 envelopes a minute, 18,000 an hour or 144,000 a day—gummed, folded and counted. The Wolf Envelope Company's output now is approximately 500,000,000 envelopes per year.

Prompt deliveries made from stocks in
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The users of Heller & Merz Colors have found that they can rely upon the quality of these dyestuffs. This faith of our customers in our ability and willingness to satisfy every requirement is important to manufacturers who demand excellence in dyestuffs and service.

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In response to the many requests the new Mammoth Traveling Wheel Grinder is now supplied equipped with either cup, ring or segmental grinding wheel.

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Economical in power and floor space, convenient to operate, and especially accurate in action.

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Complete facilities for opening letters of credit in Scandinavia to finance importations of woodpulp and paper.

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52 Cedar Street, New York

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New York Market Review

Office of THE PAPER TRADE JOURNAL,
Wednesday, June 29, 1927.

Although trading in the local paper market has quietened down somewhat, due to the holiday feeling, the demand for the various grades is considered satisfactory for the time of the year. Prices remain steady and are generally holding up to previously quoted levels. Sales forces of the leading paper houses are still booking occasional good orders and are optimistic over the coming autumn campaign.

Consumption of news print continues along heavy lines and the large production being maintained this year is being absorbed in a fairly satisfactory manner. Spot supplies are ample at present and consumers are having no difficulty in filling their requirements at reasonable prices. Shipments of news print on contract are moving in a normal manner.

Production of paper board has declined slightly and offerings are limited. Prices remain steady, in most instances. The fine paper market is practically unchanged. Tissues have been in fair request recently. Demand for wrapping paper is slightly lighter, but the coarse paper market remains in a sound condition.

Mechanical Pulp

Demand for ground wood pulp during the past week was mostly along routine lines. Production has been heavy of late and supplies are reported to be adequate for current requirements. Quotations are unaltered, and while there may have been some shading on large sized orders, there is not much talk of concessions around.

Chemical Pulp

Business in the chemical pulp market was decidedly quiet during the past week. This condition, however, is mainly seasonal, and more lively trading is anticipated after the holiday season ends. The position of the industry is sound and both importesr and domestic producers are confident of the future trend. Quotations were unchanged from previously reported levels.

Old Rope and Bagging

There was a moderate demand for foreign and domestic old rope during the week. Most of the business transacted was for immediate requirements. Prices remain unchanged. No radical changes were recorded in the bagging market. The demand for new burlap cuts was fairly active and the mills also appeared more interested in foreign and domestic gunny. Prices were unaltered.

Rags

Domestic rags were in fair demand during the week, especially white shirt cuttings. Prices are generally holding up to the levels which have prevailed for some little time past. The foreign rag situation has not changed and the home markets abroad are still reported to be absorbing most of the European supply.

Waste Paper

The local waste paper market continues practically unchanged. With the board mills operating below capacity, most of the recent purchases have been for immediate requirements. Old kraft machine compressed bales are in fair demand and there is also some request for flat stock and manilas.

Twine

The twine market pursues the even tenor of its way and while the current trading is most routine, the industry is in an excellent position for the time of the year, and considerable expansion is looked for in the Fall by many competent observers. Prices are unchanged and shading is infrequent.

NEWS PRINT TREND

(Continued from page 19)

British capital, the two governments guaranteeing the bonds of the enterprise. Recently the company operating the mills asked the Government for permission to sell to the International, at the same time asking for certain concessions for the latter corporation.

To Enlarge Beaver Cove Plant

Canadian Forest Products, Ltd., has engaged a prominent firm of engineers to make a complete survey of the water power situation at Nimpkisk River, with a view to enlarging the present pulp plant at Beaver Cove, B. C. It is proposed to expend from $10,000,000 to $15,000,000 in the development of a huge pulp and paper mill. The extent of the development, it is understood, is dependent on the amount of power available in Nimpkish River. The present plant has a capacity of fifty tons a day. The above announcements were made at the annual meeting of the company, at which the following Vancouver men were elected directors: George C. Pratt, C. S. Battle and Wendell B. Farric, K.C. Mr. Pratt is also secretary of the company. Other officers of Canadian Forest Products, Ltd., are: President, Cyrus McCormick, Jr., Chicago; vice-presidents, George R. Ranney and William M. Reay, Chicago; treasurer, Arnold B. Keller, Chicago; assistant secretary-treasurer, Wm. R. Odell, Jr., Chicago; directors, Wm. H. White, Boyne City, Mich.; R. G. Brooks and Wm. S. Elliott, Chicago.

Big U. S. Market for Madawaska Mill

Approximately 50 per cent of the bleached sulphite output of the Edmundston mill in New Brunswick of the Fraser Companies is now used in the manufacture of sulphite papers by the company's wholly owned subsidiary, Fraser Paper, Ltd., at Madawaska, Maine. The products of the Madawaska Sulphite Paper Mill which commenced operation at the beginning of 1926, are being sold in increasing volume in the United States and the mill contributed materially towards the improved earnings reported by the combined companies for the first four months of the current year. These earnings, after operating expenses and taxes, were equivalent to approximately 4½ times bond interest, and after interest and depreciation, to more than 5 times the dividend requirements of the 7 per cent cumulative convertible preferred shares.

Fraser Companies owns all the outstanding capital stock of Stetson, Cutler & Co., Ltd., thereby controlling the extensive and valuable timber properties of the latter company, as well as its saw mills.

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TENAX FELTS will positively give the longest service. We recommend Tenax 31 for Board, Tenax velour where extra finish is required, and also Tenax for Fourdrinier machines for certain papers.

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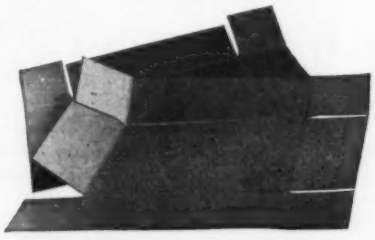

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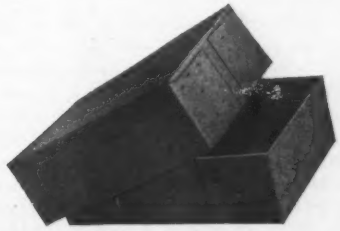

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Miscellaneous Markets

Office of THE PAPER TRADE JOURNAL,
Wednesday, June 29, 1927.

Despite the near approach of the midsummer season, a fairly satisfactory amount of new business was transacted in the local chemical market during the past week. Shipments against contract continue to go forward in excellent volume and the demand for most of the chemicals used in the paper mills shows no signs of slackening. Prices are generally holding up to schedule and reports of concessions are infrequent.

BLANC FIXE.—No radical changes were recorded in the blanc fixe market. Demand for both the pulp and the powder was mainly limited to small orders for immediate requirements. Prices remain unchanged. The pulp is quoted at $60 per ton, in bulk, and the powder is selling at from 4⅛ cents a pound to 4⅜ cents a pound, in barrels, at works.

BLEACHING POWDER.—Supplies of bleaching powder are moving into consumption at a good rate. Surplus stocks are reported to be rather limited and prices are being well maintained at the basis which has ruled for some considerable time. Bleaching powder is still quoted at from $2 to $2.40 per 100 pounds, in large drums, at works, according to quantity.

CASEIN.—Demand for casein is fairly persistent and the market is in a sound position. Offerings are about sufficient to take care of current requirements. Prices have advanced slightly on both the domestic and the imported product. Domestic casein is now quoted at from 18½ cents to 20 cents a pound, while imported casein is selling at around 18½ cents a pound, all in bags, car lot quantities.

CAUSTIC SODA.—Contract shipments of caustic soda are moving into consumption in heavy volume. While production is proceeding on a large scale, the output is being readily absorbed and there are no undue accumulations. Caustic soda is quoted at from $3 to $3.10 per 100 pounds, in large drums, at works. Spot car lots are offered at $3.20 per 100 pounds.

CHINA CLAY.—Trading in the china clay market was rather light during the past week. Contract withdrawals are proceeding at a good pace, however, and prices are unchanged. The quotations on imported china clay range from $15 to $25 a ton, ship side. Domestic paper makers' clay is quoted at from $8 to $9 a ton, at mine, and pulverized at from $10 to $12 a ton.

CHLORINE.—Business in the chlorine market continues active and the movement on contract is heavy for the time of the year. Prices remain steady and unaltered. Chlorine is still selling at 4 cents per pound, in tanks, or multi-unit cars, at works, on contract. The spot quotation is from 4¼ cents to 4½ cents a pound.

ROSIN.—Conditions in the rosin market are decidedly quiet. Prices have declined rather sharply. At the naval stores, the grades of gum rosin used in the paper mills are now offered at from $9.70 to $9.80 per 280 pounds, ex dock, in barrels. Wood rosin is in persistent request at $9.50 per 280 pounds, southern shipping points.

SALT CAKE.—The undertone of the salt cake market is sound. Producers are generally well sold ahead and offerings are limited. Prices are being maintained at the previously quoted basis. Salt cake is selling at from $18 to $19 a ton, in bulk, at works. Chrome salt cake is offered at from $14 to $15 a ton, in bulk, at works.

SODA ASH.—Supplies of soda ash are moving into consumption in excellent volume. Demand for this product has been unusually heavy during the current month. Prices are holding up to schedule, in most instances. Contract quotations, in car lots, at works, per 100 pounds, are quoted as follows: in bulk, $1.20; in bags, $1.32½, and in barrels, $1.57½.

STARCH.—Demand for paper makers' starch was fairly active during the past week. Although the price of grain has been advanced, the quotations on starch so far are unchanged from the basis which has prevailed for some time. Special paper makers' starch is still quoted at $3.07 per 100 pounds, in bags, and at $3.24 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Most of the business transacted in the sulphate of alumina market during the past week was along routine lines. The movement against contract is being well maintained, however. Commercial grades of sulphate of alumina are selling at from $1.40 to $1.50 per 100 pounds, in bags, at works, in car lots. The iron free is quoted at from $2 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—During the past week the sulphur market was moderately active. Contract withdrawals continue to move at a good pace. Prices are holding up to schedule in a satisfactory manner. Sulphur is still selling at from $18 to $19 a ton, in bulk, at mine, on contract orders. The spot quotation is $20 a ton.

TALC.—The condition of the talc market is unchanged. Demand from the paper mills for this product is along seasonal lines and prices are being maintained at the recently quoted basis, in most instances. Quotations on domestic talc range from $16 to $18 a ton, at eastern mines. French talc is selling at from $18 to $22 a ton, ship side.

PAYROLL ANALYSIS

(*Continued from page 53*)

duction hours by Department" we can tabulate for each department the number of standard hours required to produce its schedule. The total number of standard hours actually produced by the department having been ascertained, the over-or under-production of the department may readily be determined and the proper steps taken to remedy the trouble. Through this means a control of inventories may be secured weekly by maintaining a balanced condition between departments.

It is not to be imagined that in a paper of this sort, it is possible to point out in detail the ramifications of the subject, nor is it possible to suggest the manner in which the data available might be used to best advantage by each particular industry. A proper conception of the basic or underlying facts is the first and most important thing. Individual applications may vary, but if the proper standards are set and there is an agreement upon definition of the terms, which we use, regardless of the particular word, it is then possible to make comparisons which have heretofore been impossible, not only within a given organization itself from time to time by department, but with other organizations or industries.

Pondosa Pine May Be Utilized for Paper Products

SEATTLE, Wash., June 24, 1927.—That the yellow or Pondosa pine of Idaho, Oregon and Washington is susceptible to conversion into pulp is now practically reduced to a certainty. A few days ago, according to Professor B. L. Grondal, of the College of Forestry, University of Washington, after a series of tests made of samples of the wood, it was found that it would work up to good advantage as sulphite or sulphate pulp stock either alone or in combination with other pulp woods.

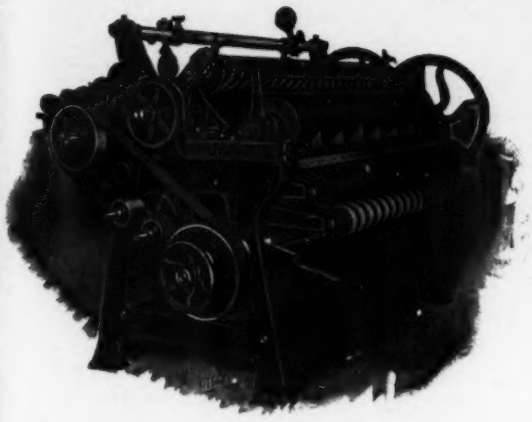
J. C. Biles, of the Biles-Colman Lumber Company, Omak, Wash., also submitted some samples of Pondosa pine to the testing Laboratory at Madison, Wis., the report of which was recently announced to be highly satisfactory. This large lumber manufacturing concern is seriously contemplating the addition of a pulp mill to take care of the waste mill ends of their box shook mill and only awaited a report as to its feasibility before attempting to work out their plans.

Worm Gears and Drives

The Fawcus Machine Company, manufacturers of mill equipment, cut gears and special machinery, of Pittsburgh, Pa., have just issued a new catalog, describing a new line of Fawcus Worm Gear Speed Reducers, equipped with Timken Roller Bearings. This catalog is replete with typical illustrations and engineering data.

Paper Cutters

Single, Duplex and Diagonal



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HAMBLET MACHINE CO.

LAWRENCE MASS.

Clay

300 tons daily

AMERICAN MADE FOR AMERICAN TRADE

Some portion of our clay production is *pulverized.* That part of it which is *pulverized* is, as far as we know, the only *pulverized clay* which is washed and refined before being pulverized.

This insures greater freedom from impurities and an exceedingly uniform product.

Prices of M-E pulverized clay may surprise you even considering this additional treatment.

Let us submit sample and quote you.

THE

MINER-EDGAR CO.

110 William St.,
NEW YORK

For reliable running and average long life

LINDSAY FOURDRINIER WIRES

are unsurpassed

We make them for the largest and fastest machines.

Cylinder Wires All Sizes

The Lindsay Wire Weaving Co.

Collinwood Sta. CLEVELAND, OHIO

Superior Quality

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Robison Products Corporation

Telephone:
Madison Square 3092-3-4

44 East 25th Street
New York

Market Quotations

Quoted by Hepburn & Co., 74 Broadway, N. Y. City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	OFFERED
Advance Bag & Paper, 7s 1943	105	107
A. P. W. Pulp & Power, 7s 1945	101	102
American Writing Paper, 6s 1947	79	82
Bastrap Pulp & Paper, 6½s 1940	100	103
British Columbia Pulp & Paper, 6s 1950	85	90*
Beaver Products Corp., 7½s 1942	106	109
Berkshire Hills Paper, 8s 1941	60	80
Brown Paper Co., 1st 5½s 1946	94	98
Bryant Paper Co., 6s 1942	100½	102
Cape Breton Pulp & Paper, 6s 1932	101	103
Central Paper Serial 6, 6½s 1942	89	...
Champion Coated Paper, 6s 1926 to 1932	98	...
Champion Fibre, 8s 1930	100	...
Champion Paper Corp'n, 1st 6s 1945	95	97
Continental Paper Products, 6½s 1943	88	91½
Cornell Wood Prod., 7½s 1937	100	104*
Crown Willamette Paper, 6s 1951	97	101
Donnaconna Paper, 6s 1940	101	102½
Dells Paper & Pulp Serial, 6s 1926-38	*95	...
Eastern Mfg. Co., 7s 1938	89	91
Eddy Paper, 7½s 1931	102	104
Escanaba Paper Serial, 6s 1926-39	94	96
Fuer Fibre Serial, 7s 1926-39	95	...
Fort Orange Paper, 7s 1942	95	100*
Fox River Paper, 7s 1931	99	...
Gair Co. (The Robt.), 7s 1937	104	106
Gilbert Paper Co., 6½s 1926-29	89	...
Hammermill Paper, 6s 1939	100	103*
Hoberg Paper & Fibre, 7s 1937	94½	96
Itaska Paper & Prairie River Power, J+5½s 1926-38	94	96*
Itaska Paper 1st, 6s 1933-38	96	98*
Kalamazoo Veg. Parchment, 6s 1938	98	...
Marinette & Menominee, 7½s 1936	101	...
Mead Pulp & Paper, 5% Notes, 1927-37	92	95
Menasha Printing & Carton, 6½s 1939	99½	...
Mengel Company, 7s 1926 to 1934	100*	102
Monroe Paper Products, 7½s 1932	96	...
Munising Paper, 6s 1927-36	96	100
Nekoosa Edwards, 1st Ref. 6s 1928 to 1942	96	99*
Orono Pulp & Paper, 6s 1943	98	...
Orono Pulp & Paper, 5s 1941	94	...
Oswego Falls Corp., 6s 1941	98	100*
Oxford Paper, 6s 1947	100	...
Paepcke Paper Mills, 7s 1930	99	None
Parsons Pulp & Lumber, 7s 1928	97	...
Parker Young Co., 6½s 1944	95	99
Paterson Parchment Paper, 6s 1938	100½	102
Penobscot Chemical Fibre, 6s 1942	98	...
Poland Paper, 7s 1930	98	...
Port Alfred Pulp, 6½s 1943	*96	...
Queens City Paper, 7s 1932	95	100*
Richardson Co., 6s 1938	100	...
Spanish River Pulp & Paper, 8s 1941	106	110
Stevens & Thompson Paper, 6s 1942	93	95
St. Anne Paper, 6½s 1946	95½	98*
St. Croix Paper, 5s 1926-37	95	98*
St. Regis Paper Serial, 6½s 1926-35	98½	...
Tait Paper & Color Industries, 6s 1934	89	92
Taggart Bros. Co., 6s 1944	94	97
Ticonderoga Pulp & Paper, 5s 1930	95	98
Ticonderoga Pulp & Paper, 6s 1940	99	101
Warren (The S. D.) Company, 6s 1945	98	101
Wotah Paper, 6½s 1943	102	...
Westfield River Paper, 7s 1926-43	Wanted	...
Whitaker Paper, 7s 1942	106	108
Witmer-Parsons Pulp & Lbr. (Units)	63	70

STOCKS	BID	ASKED
Advance Bag & Paper, 8% Pfd.	97	100*
Am. Tissue Mills, 7% Pfd.	95	100
British Columbia P. & P., Pfd.	65	70
Brompton Pulp & Paper, 8% Pfd.	93	98*
Brown Corpn., 7% Pfd.	97	100*
Champion Fibre, 7% Pfd.	99	103*
Diem & Wing, 7% Cum. Pfd.	87	...
Donnaconna Paper, Com.	58	...
Donnaconna Paper, Pfd.	95	100
Eastern Mfg. Co., 1st Pfd.	34	37
Great Northern Paper (new)	62	65
Hammermill Paper, 7% Pfd.	105	110
Hinde & Dauch, Com.	135	...
Hinde & Dauch, Pfd.	100	...
Holyoke Card & Paper	150	None
Marathon Paper Mills, Com.	125	...
Midwest Box Co., Pfd. 8%	80	85
Midwest Box Co., Pfd. 6%	55	65
Louis De Jonge Co., 7% Pfd.	93	96
Oxford Papers, Com.	170	——
Oxford Paper Co., Pfd.	175	——
Penobscot Chemical Fibre, Com.	65	75*
Richardson Co., 7% Pfd.	104	...
Rubberoid Company	73	77
Seaman Container, Class B (par $1)	1	None Off.
Seaman Paper Co.	Wanted	None Off.
St. Croix Paper	150	170
St. Regis Paper Co., 7% Cum. Pfd.	97	100
Westfield River Paper Co., 1st Pfd.	Wanted	None Off.
West Virginia Pulp and Paper, Com.	58	63
West Virginia Pulp and Paper, Pfd.	97	102
Whittaker Paper, 7% Cum. Pfd.	97	103

* Nominal.

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.25	@ —
Rolls, transient	3.25	@ 3.50
Sheets	3.65	@ 3.85
Side Runs	3.00	@ 3.75
Book, Cased—		
S. & S. C.	6.35	@ 7.75
M. F.	6.25	@ 7.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .85
Kraft	.90	@ 1.00
Manila	.75	@ .85
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	5.25	@ 5.50
Southern	4.75	@ 5.25
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	47.50	@50.00
Straw	53.50	@57.50
Chip	45.00	@50.00
Binders' Boards	70.00	@75.00
Sgl. Mla. Ll. Chip.	57.50	@60.00
Wood Pulp	80.00	@85.00
Container	65.00	@70.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	30.00	@32.00
Dry	34.00	@36.00

(F. o. b. Mill)

No. 1 Domestic	27.00	@30.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.50	@ 4.50
Easy Bleaching	3.05	@ 3.25
No. 1 strong unbleached	2.60	@ 2.85
Mitscherlich unbleached	2.65	@ 3.40
No. 2 strong unbleached	2.50	@ 2.70
No. 1 Kraft	2.70	@ 2.90
Sulphate—		
Bleached	3.75	@ 4.00

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.85	@ 3.05
News Sulphite	2.50	@ 2.70
Mitscherlich	3.25	@ 3.75
Kraft (Domestic)	2.70	@ 3.40
Soda Bleached	3.50	@ 3.75
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.50	@ 1.85

Domestic Rags

New Rags

Prices to Mill f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	12.00	@12.50
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.75	@11.25
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	7.25	@ 7.75
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.50	@ 5.25
Pink Corset Cuttings	9.50	@10.00
O. D. Khaki Cuttings	5.25	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.75	@ 6.50
Miscellaneous	4.75	@ 5.25
White, No. 2—		
Repacked	3.25	@ 3.75
Miscellaneous	2.75	@ 3.00
St. Soiled, White	2.50	@ 2.75
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.65	@ 1.75
No. 1	1.65	@ 1.75
No. 2	1.35	@ 1.45
No. 3	1.25	@ 1.35
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.75	@ 8.50
Unbleached Cottons	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
New Mixed Cuttings	3.00	@ 3.50
New Dark Cuttings	2.75	@ 3.25
No. 1 White Linens	7.00	@ 7.75
No. 2 White Linens	5.25	@ 6.00
No. 3 White Linens	4.00	@ 4.50
No. 4 White Linens	3.00	@ 3.50
Old Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med Light Prints	1.85	@ 2.10
Dutch Blue Cottons	2.25	@ 2.50
German Blue Linens	2.50	@ 2.75
German Blue Cottons	2.00	@ 2.25
Checks and Blues	1.75	@ 2.00
Lindsay Garments	1.80	@ 1.85
Dark Cottons	1.65	@ 1.70
Shoppery	1.50	@ 1.60
French Blues	2.25	@ 2.50

Old Rope and Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1—		
Foreign	1.75	@ 1.85
Domestic	1.80	@ 1.90
Wool Tares, light	1.60	@ 1.70
Wool Tares, heavy	1.60	@ 1.70
Bright Bagging	1.60	@ 1.70
Small Mixed Rope	1.50	@ 1.65
Manila Rope—		
Foreign	3.25	@ 3.75
Domestic	4.25	@ 4.75
New Burlap Cut	3.00	@ 3.25
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.25	@ 3.50
Hard, White, No. 2	2.90	@ 3.10
Soft, White, No. 1	2.75	@ 2.90
Flat Stock—		
Stitchless	1.25	@ 1.35
Overissue Mag.	1.25	@ 1.35
Solid Flat Book	1.15	@ 1.25
Crumpled No. 1	.80	@ .90
Solid Book Ledger	1.90	@ 2.10
Ledger Stock	1.40	@ 1.50
New B. B. Chips	.45	@ .55
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.65	@ .75
Container Board	.50	@ .55
Bogus Wrapper	.70	@ .80
Old Kraft Machine—		
Compressed bales	2.00	@ 2.10
News—		
No. 1 White News	1.50	@ 1.60
Strictly Overisszue	.65	@ .75
Strictly Folded	.47½	@ .52½
No. 1 Mixed Paper	.37½	@ .42
Common Paper	.25	@ .30

West Virginia Pulp and Paper Company

Manufacturers of

SUPERCALENDERED and MACHINE FINISHED BOOK and LITHOGRAPHIC PAPERS

Offset, Envelope, Bond, Writing, Cover and Music Paper, High Grade Coated Book, Index Bristol, Post Card, Kraft and Label Papers.

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Habit robs profits

—in the finishing room as elsewhere. What do you use to cap your rolls? "Seal" Brand silicate is used successfully by dozens of mills. Whether your finishing is by hand or by hydraulic headers "Seal" Brand will cut your glue cost.

No mixing or cooking with "Seal" Brand and it's good to the last brushful. A free trial on request.

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General Offices: PHILADELPHIA

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Sulphur

A FIRST REQUISITE

IN

Paper Making

Large Production
Ample Reserves
Prompt Deliveries
Purity 99½%

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Mine Gulf, Matagorda County, Texas

1864 1927

"EXCELSIOR" FELTS

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PULP AND PAPER

We continue to maintain at the top the quality of Excelsior Felts, as we have done since we, as pioneers, made the first endless paper machine felts manufactured in America.

Seamless felts for fast running.
Satin Style felts for finish.
Special felts to meet every condition.
Send us your felt problems.

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KNOX WOOLEN COMPANY
CAMDEN, MAINE

BULKLEY, DUNTON & COMPANY
75-77 Duane St., N. Y., and direct

Twines

F. o. b. Mill

Cotton—			
No. 1	.28	@	.29
No. 2	.26	@	.27
No. 3	.24	@	.25
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.21	@	.23
No. 2	.20	@	.22
Tube Rope—			
4-ply and larger	.18	@	.19
Fine Tube Yarn—			
5-ply and larger	.23	@	.27
4-ply	.24	@	.28
3-ply	.26	@	.30
Unfinished India—			
Basis	.16	@	.17
Paper Makers Twine			
Balls	.13	@	.15
Box Twine, 2-3 ply	.17	@	.19
Jute Rope	.21	@	.23
Ameri. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.18	@	.20
No. 2 Basis	.16	@	.18
Sisal Lath Yarn—			
No. 1	.16	@	.18
No. 2	.14	@	.16
Manila Rope	.24	@	.26

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¼
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.05¾	@	.06¼
Southern Kraft	.04½	@	.05
No. 2 Kraft	.05	@	.05¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 sheet	.07¼	@	.07½
Boards, per ton— (Delivered Central Territory—			
Plain Chip	45.00	@	47.50
Solid News	47.50	@	—
Manila Line Chip	55.00	@	57.50
Container Lined— (Delivered Central Territory)—			
85 Test	65.00	@	70.00
100 Test	70.00	@	75.00

Old Papers

F. o. b. Chicago

Shavings—			
No. 1 Hard White	3.60	@	3.70
White Env. Cuttings	3.60	@	3.70
No. 1 Soft Shavings	2.90	@	3.00
No. 1 Mixed	1.35	@	1.45
No. 2 Mixed	1.05	@	1.10
Ledger & Writings	1.45	@	1.60
Solid Books	1.20	@	1.30
Blanks	1.65	@	1.75
Krafts	1.80	@	1.90
New Kraft Cuts	2.25	@	2.35
Manila Envelope Cuttings	2.00	@	2.10
Ex. No. 1 Manila	1.55	@	1.65
Print Manila	.80	@	.90
Folded News (oversisue)	.65	@	.75
Old Newspapers—			
No. 1	.55	@	.60
No. 2	.50	@	.55
Mixed Papers—			
No. 1	.55	@	.60
Roofing Stocks— F. o. b. Chicago, net cash			
No. 1	30.00	@	—
No. 2	28.00	@	—

BOSTON

Paper

F. o. b. Mill

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05¾	@	.06½
No. 2 Kraft	.04¾	@	.05¾
Common Bogus	.02	@	.02½
Delivered New England points			
Straw Board, rolls .009			57.50
Straw Board in Sheets, basis 35s to 70s			53.50
Filled News Board			47.50
Chip Board			45.00
Single Manila Pulp lined board	55.00	@	60.00
Single White, patent coated board bender	75.00	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mills)			
Tarred Felts— Regular, carload lots	65.00	@	—

Old Papers

F. o. b. Boston

Shavings—			
No. 1 Hard White	3.15	@	3.30
White Blank News	1.40	@	1.50
Manila Env. Cuttings	2.00	@	2.25
No. 2 Hard White	3.00	@	3.25
No. 1 Soft White	2.85	@	3.00
No. 1 Soft White	2.75	@	3.00
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.00	@	2.25
No. 1 Books, Heavy	1.17½	@	1.30
No. 1 Books, Light	—	@	1.15
Old Kraft	1.75	@	1.90
No. 1 Old Manila	1.40	@	1.60
No. 1 Mixed Paper	.45	@	.50
Print Manila	.70	@	.80
Overissue News	.55	@	.60
Old Newspapers	.45	@	.50
Box Board, Chip	.45	@	.60

Bagging

Price f. o. b. Boston

Gunny No. 1—			
Foreign	1.50	@	1.60
Domestic	1.50	@	1.60
Manila Rope—			
Foreign	3.50	@	3.75
Domestic	4.00	@	4.37½
Mixed Rope	1.05	@	1.15
Scrap burlaps	1.35	@	—
Wool Tares, heavy	1.40	@	1.60
Mixed Strings	.90	@	1.05
New Burlap Cutting	2.15	@	2.25

Domestic Rags (New)

Price f. o. b. Boston

Shirt Cuttings—			
New White No. 1	.11¼	@	.11½
Silesias, No. 1	.07	@	.07½
New Unbleached	.10	@	.10½
Fancy	.05¼	@	.06
Washable	.04½	@	—
Cottons—According to Grades—Blue—			
Blue Overalls	—	@	.07
New Black, soft	.04	@	.04¼
Khaki Cuttings	.05	@	.05½
Corduroy	.03	@	.03½
New Canvas	.09	@	.10

Domestic Rags (Old)

Price f. o. b. Boston

White No. 1—			
Repacked	5.00	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Thirds and Blues—			
Repacked	2.12½	@	2.37½
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.62½	@	—
No. 2	1.37½	@	—
No. 3	1.22½	@	—
No. 4	1.12½	@	—

PHILADELPHIA

Paper

F. o. b. Mill

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06¼	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph	.09	@	.12
Label	.09	@	.12
News	.03¾	@	.04
No. 1 Jute Manila	.09½	@	—
Manila Sul., No. 1	.04½	@	.06
Manila, No. 2	.04	@	.04½
No. 2 Kraft	.05	@	.05¼
No. 1 Kraft	.06	@	.06¼
Common Bogus	.02¼	@	—
Straw Board	60.00	@	65.00
News Board	45.00	@	50.00
Chip Board	40.00	@	42.00
Wood Pulp Board	4.50	@	5.00
(Carload Lots)			
Binder Boards—			
No. 1, per ton	85.00	@	90.00
No. 2, per ton	70.00	@	75.00
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	66.00	@	58.00
Slaters	70.00	@	72.00
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.55	@	1.70
Best Tarred, 3-ply	2.10	@	2.15
No. 1 Mixed Paper	.65	@	.70

Domestic Rags (New)

Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.11½	@	.12
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07½	@	.08
Black Silesia, soft)	.05	@	.05½
New Unbleached	.10½	@	.11
Washable	.04	@	.04½
Fancy	.05½	@	.06
Cottons—according to grades—			
Blue Overall	.07½	@	.08
New Blue	.03½	@	.04
New Black Soft	.05½	@	.06
New Light Seconds	.03	@	.03½
Khaki Cuttings	.04½	@	.05
Corduroy	.03	@	.03¾
New Canvas	.08	@	.09
New Black Mixed	.05	@	.05½

Bagging

F. o. b. Phila

Gunny, No. 1—			
Foreign	1.75	@	2.00
Domestic	1.75	@	2.00
Manila Rope	4.25	@	4.50
Sisal Rope	1.25	@	2.00
Mixed Rope	1.25	@	1.50
Scrap Burlaps	1.75	@	2.00
Wool Tares, heavy	2.00	@	2.25
Mixed Strings	1.50	@	1.75
No. 1, New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.25	@	2.50

Old Papers

F. o. b. Phila.

Shavings—			
No. 1 Hard White	3.50	@	3.60
No. 2 Hard White	3.00	@	3.25
No. 1 Soft White	2.80	@	2.90
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.90	@	2.00
Writing Paper	1.65	@	1.75
No. 1 Books, heavy	1.15	@	1.20
No. 2 Books, light	.80	@	.85
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	1.00	@	1.10
Container Manila	.75	@	.80
Old Kraft	2.00	@	2.20
Common Paper	.40	@	.50
No. 1 Mixed Paper	.50	@	.60
Straw Board, Chip	.60	@	.65
Binders Board, Chip	.60	@	.65
Overissue News	.75	@	.80
Old Newspaper	.50	@	.60

Domestic Rags (Old)

White, No. 1—			
Repacked	5.00	@	5.25
Miscellaneous	4.75	@	5.00
White, No. 2—			
Repacked	.03½	@	.04
Miscellaneous	.02	@	.02¾
Thirds and Blues—			
Repacked	2.50	@	2.75
Miscellaneous	1.75	@	2.00
Black Stockings	3.25	@	3.50
Roofing Stock—			
No. 1	1.62½	@	—
No. 2	1.37½	@	—
No. 3	1.25	@	1.35
No. 4	1.20	@	1.30
No. 5A	.90	@	1.00
B	.80	@	.90
C.	.80	@	.90

TORONTO

Paper

F. o. b. Mill

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (Carloads)	3.25	@	—
Sheet (carload)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carLoads	7.75	@	—
No. 2 M. F. (carloads	7.50	@	—
No. 3 M. F. (carloads)	7.25	@	—
No. 1 S. C. (carloads)	8.25	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 3 S. C. (carloads)	7.75	@	—
No. 1 Coated and litho	14.50	@	—
No. 2 Coated and litho	13.50	@	—
No. 3 Coated and litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.85	@	—
White Rap	5.25	@	—
"B" Manila	5.65	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.20	@	—
M. G.	7.35	@	—

Pulp

(F. o. b. Mill)

Ground wood	28.00	@	30.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	55.00	@	58.00
Sulphite, bleached	78.00	@	80.00
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

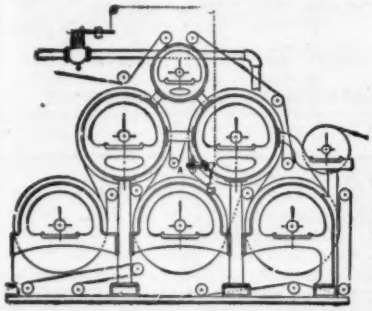
Shavings—			
White Env. Cut	3.30	@	—
Soft White Book Shavings	3.00	@	—
White Blk, News	1.40	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.25	@	—
Light and Crumpled Book Stock	1.10	@	—
Ledgers and Writings	1.40	@	—
Solid Ledgers	1.40	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.47½	@	.52½
No. 1 Mixed Paper	.37½	@	.42

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.12	@	.12½
Fancy Shirt Cuttings	.06	@	.06¼

The Pickles Drying Regulator



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YOU'LL MAKE NO MISTAKE IN ACCEPTING IT

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will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

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protects your rolls and insures their delivery to your customer in perfect condition. They eliminate claims for damages.

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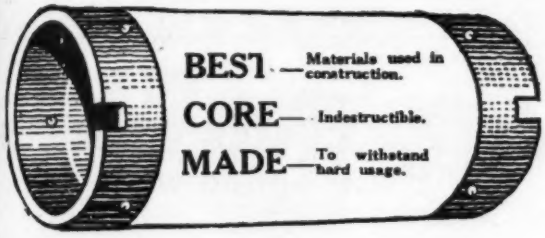

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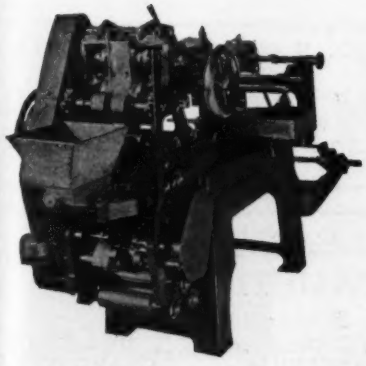
NEW YORK



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Always marked with the "Diamond"
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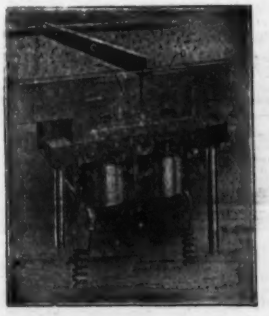
SINCE 1864



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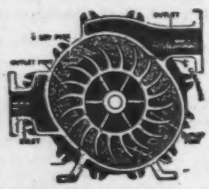

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HELP WANTED

WANTED—A-1 paster machine operator on a 106" machine pasting four and five-ply wall board, plain chip and container. A hustler and good organizer. References and wages in first letter. Address, Box 27-351, care Paper Trade Journal. Jn-30

IF YOU are open to overtures for new connection, and qualified for a salary between $2,500 and $25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service, of recognized standing and reputation, through which preliminaries are negotiated confidentially for positions of the calibre indicated. The procedure is individualized to each client's personal requirements; your identity covered and present position protected. Established sixteen years. Send only name and address for details. R. W. Bixby, Inc., 117 Downtown Building, Buffalo, New York. tf.

SUPERINTENDENTS, EXECUTIVES, ENGINEERS, $3,000-$25,000, find our individual confidential service effective in making new connections. Personally planned by Jacob Penn, the eminent employment authority, known to all paper mill owners. Not agency. Jacob Penn, Incorporated, 816 Parkmurray Building, New York. tf.

MASTER MECHANIC required to take complete charge of repair crews in large pulp and paper mill. Must have paper mill experience and be able to get results. State age, experience, citizenship, family, salary desired, and when could report. Location Northern Ontario. Address, Box 27-331, care Paper Trade Journal. Jn-30

MACHINE TENDER WANTED on board machine. Steady work. State experience and salary expected. Address, Box 27-354, care Paper Trade Journal. Jl-7

MACHINE TENDERS WANTED for new cylinder tissue machine ready to start. Steady work. Reference required. Address, Box 27-364, care Paper Trade Journal. Jl-14

ENERGETIC, capable toilet paper perforating foseman to take full charge of perforating department in small Eastern town. Give experience and references in application. Address, Box 27-365, care Paper Trade Journal. Jn-30

BEATERMAN WANTED for two machine mill in Delaware, making rag and wood book specialties; three towers. Must be exnerienced in colors. Address, Box 27-361, care Paper Trade Journal. Jl-14

SUPERINTENDENT for one-machine, 50 ton, board mill running on high grade combination box boards. In reply give outline of experience with name of mills and position; also age and salary expected. Address, Box 27-370, care Paper Trade Journal. Jl-7

Classified Advertising usually brings results

SITUATIONS WANTED

SULPHITE COOK, age 30, married, 8 years experience, best of references, would like chance for advancement. Address, Box 27-366, care Paper Trade Journal. Jl-7

PULP AND PAPER MILL ENGINEER—Age 35 years, married, ten years experience on maintenance, remodelling, extension programs, and purchase of equipment. Prefer position as plant or construction engineer. Can handle men. References furnished. Address, Box 27-367, care Paper Trade Journal. Jl-14

WANTED—Position, superintendent or assistant superintendent, 12 years experience board, felt, .009 straw, asbestos. 33 years old. Employed. Address, Box 27-362, care Paper Trade Journal. Jn-30

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SUPERINTENDENT—31; have had 10 years general experience in the manufacture of prepared roofings. Can furnish excellent references as to character and ability. Will go anywhere. Open for engagement soon. Address, Box 27-360, care Paper Trade Journal. Jl-7

MACHINE TENDER open for position. Accustomed to all grades of tissue, fast and slow speed. Good references. Can come at once. Address, Box 27-355, care Paper Trade Journal. Jl-14

WANTED—Position as superintendent or manager in mill making tissue, waxing, manifold, butchers or kraft. Small mill preferred where one man can fill both positions. Can also de-ink old papers at small cost. Address, Box 27-356, care Paper Trade Journal. Jl-7

SUPERINTENDENT—Open for position in specialty mill; well up on colors. Knows requirements of many converters. Can get production and quality, cylinder and Fourdrinier; Kraft envelope, covers, vulcanizing fiber. Address, Box 27-357, care Paper Trade Journal. Jn-30

PULP AND PAPER MILL ENGINEER—41 years of age, single, with 20 years experience in design, construction and remodeling of mills, desires connection. References furnished. Address, Box 27-132, care Paper Trade Journal. Jn-30

SUPERINTENDENT would like position in mill making waxing, tissues, toilet papers, toweling or crepe papers. Familiar with all types of machines. Can handle help, keep your mill up, and get results. Address, Box 27-289, care Paper Trade Journal. Jn-30

SITUATIONS WANTED

YOUNG MAN—24, well educated, good appearance, desires to connect with reputable paper concern, inside or outside. Willing to start at small salary to show ability. Address, Box 27-375, care Paper Trade Journal. Jn-30

AVAILABLE—Salesman of the highest type; American, age 36, single. Has had years of experience in the sales end of the paper manufacturing business; experience in both coarse and fine papers. Desires to secure responsible mill connection. Highest credentials. Address, Box 9890, care Paper Trade Journal. tf.

COATED PAPER — SUPERINTENDENT wishes connection with concern desiring the services of thoroughly trained reliable man, and expert colorist, with wide practical experience in the manufacture of all kinds of fancy papers. Address, Box 27-349, care Paper Trade Journal. Jn-30

GROUND WOOD FOREMAN and Millwright open for position. Best of references. Familiar with electrical equipment. Address, Box 27-346, care Paper Trade Journal. A-11

SUPERINTENDENT—Trained in the manufacture of tissues, Kraft, twisting, waxing colored specialties, converting specialties, crepes, napkins, towels, Kraft, colored crepes, fine and coarse, fireproof and oiled papers, waxed Kraft, tissues, and bread wraps. References. Address, Boxx 9672, care Paper Trade Journal. Jl-7

MR. PAPER JOBBER OR CONVERTER! Cut card specialist desires position. Eighteen years experience. Knows paper. Will take charge of your stocking, receiving, shipping. Address, Box 27-338, care Paper Trade Journal. Jn-30

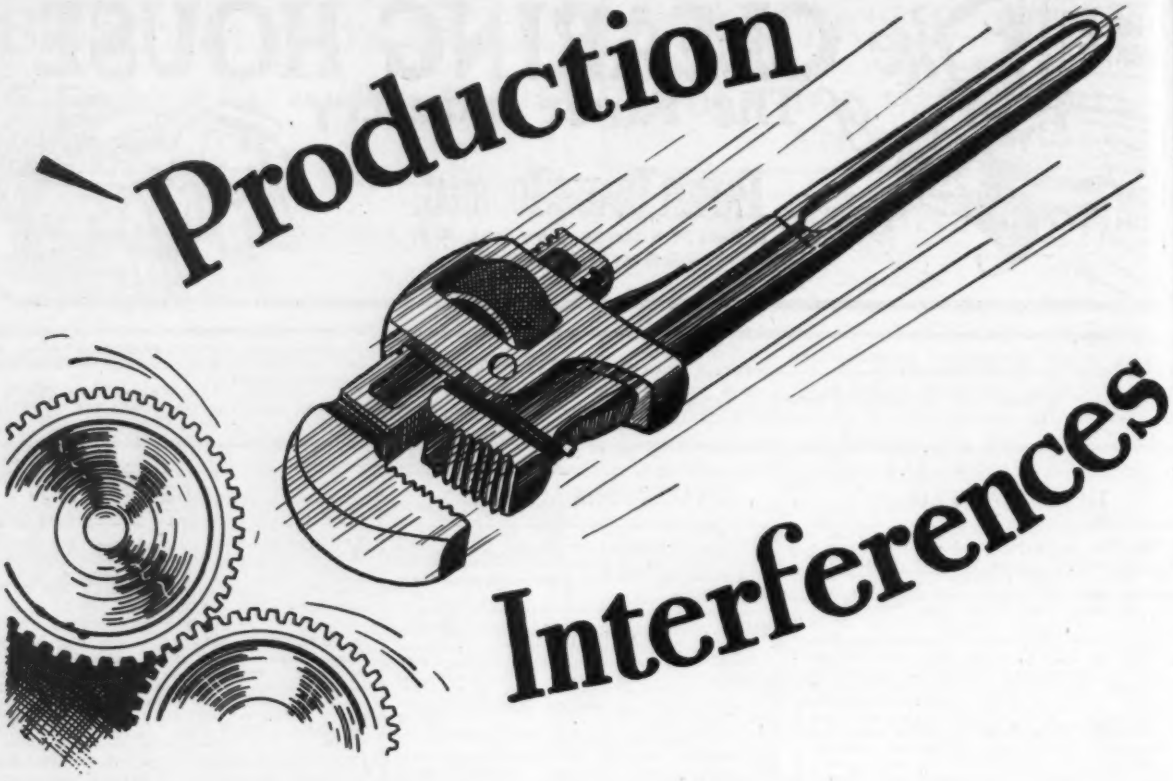
WANTED—Position as assistant superintendent, night or tour boss, by practical paper maker. Any type machine and nearly all grades of paper. Kraft a specialty. Married, good reference. Address, Box 27-343, care Paper Trade Journal. Jn-30

PAPER SALESMAN with twelve years experience seeking position as Chicago representative for manufacturer of fine papers. Address, Box 27-352, care Paper Trade Journal. tf.

TOUR BOSS wishes position. 25 years experience on all kinds of paper and groundwood, also glassine and greaseproof. Good on colors. Address, Box 27-311, care Paper Trade Journal. Jn-30

ASSISTANT SUPERINTENDENT — College graduate, chemist, nine years practical experience and research in rag fine writing papermaking and specialties, desires position with opportunity for advancement. Address, Box 27-320, care Paper Trade Journal. tf.

IMPROVEMENTS — Mills contemplating improvements and extensions to buildings and equipments can secure the services of a competent engineer. References furnished. Address, Box 27-345, care Paper Trade Journal. Jl-7



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it is like throwing the proverbial monkey wrench into the works. Down time, interrupted production, and reduced revenue inevitably follow.

Install a Shartle Miami Pump and get clear away from production interferences—at least so far as stuff pumps are concerned.
Let us prove to you by performances in hundreds of mills—by specifications too—that the properly designed and sturdily built Shartle Miami will deliver longer uninterrupted service than any other pump.

Let us refer you to mills where Shartle Miamis have been in continuous use from twenty to twenty-five years—each with a service record behind it that cannot be duplicated in any other make of pumps.

If you write some of these mills for their opinion, your next stuff pump will be a Shartle Miami. It invariably turns out that way.

Shartle Brothers Machine Company
Middletown, Ohio

SHARTLE BROTHERS

DIVISION OF THE BLACK-CLAWSON COMPANY

Shartle Miami SHARTLE **Stuff Pumps**

MISCELLANEOUS

HAVE YOU any odd size Rolls or Sheets to offer, regardless of size or quantity? We are also interested in Damaged Paper—rejected lots—Wood Pulp—Tympan or Offset, either in Rolls or Sheets. Submit samples to Goldman Paper and Paper Stock Co., 414 So. Front Street, Philadelphia, Pa. tf.

WANTED—Mill ends and job lots in rolls or flats in any quantity, all grades. Also boards. Joseph Goldstein & Sons, 1302-9 N. Halsted Street, Chicago, Illinois. tf

CLARK MANUFACTURING COMPANY, Holyoke, Mass. Telephone 1828. Builders of cylinder moulds, couch and felt rolls, dandy rolls. We cover dandies and cylinders tight, for fast running machines. 3-5-27

WANTED—We are interested in job lots of paper of any kind, large or small quantities. Submit samples and price. Ireland & Taub Paper Co., Inc., 121 Sullivan Street, New York. tf

WANTED—Mill ends, rejected, or damaged rolls, any quantity or grade. W. A. Johns Paper Company, 526 West 18th Street, Chicago, Illinois. Jn-21

WANTED

WANTED—2 W. & P. Pulpers, 2 Filter Presses and 1 Rogers Wet Machine. Address, Box 27-285, care Paper Trade Journal. tf.

WANTED—One 120 inch Brannon Folder in good condition. Address, Box 27-368, care Paper Trade Journal. Jl-7

FOR SALE

FOR SALE—Second-hand 1200 lb. wood tub N. & W. beater. In good condition. The Noble & Wood Machine Co., Hoosick Falls, N. Y tf.

FOR SALE—Manufacturing and Sales rights covering latest development in the art of paper making. The greatest advance since the Fourdrinier part and a decided innovation. Nothing of a theoretical nature and designed only on sound basic principles. Full protection by United States, Canadian and foreign patents. For particulars or conference, write Box 27-353, care Paper Trade Journal. Jn-30

FOR SALE—6 Used Jones Imperial Jordans, with bronze or steel fillings. Will sell "as is" or factory rebuilt. THE NOBLE & WOOD MACHINE CO., Hoosick Falls, N. Y. tf.

FOR SALE—One 500 KW., 80% P.F., 440 volt, 3 phase, 60 cycle, 3600 RPM., G. E. Turbo-Generator Set complete with one Spiroflo Alberger Condenser and steam driven removal pump together with one dry vacuum pump of sufficient capacity. Address, Box 27-369, care Paper Trade Journal. Jn-30

FOR SALE

72" No. 10 Model Cameron Rewinder and Slitting Machine in good condition—not very old, with or without motor.

Will sell reasonable

THE WHITAKER PAPER COMPANY

Cincinnati, Ohio. JI-7

Classified Advertising Brings Results

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New Cylinder Machines

1—Sandy Hill, 7 cylinders, 90—48" Dryers, 108" face, presses, calenders, stacks, reel, slitter and winder.

1—Smith and Winchester 6 cylinders, 51—36" dia. dryers, 80" face, presses, calender stacks, reel, slitter and shaft winder.

TECHNICAL ECONOMIST CORPORATION

40 RECTOR ST., NEW YORK, N. Y.

New Hydraulic Presses

2—Dunning and Boshert 600 tons Hydraulic Presses, 42" x 18", including one large and one small D. & B. Triplex pumps, complete with high pressure pipe, accumulator and fittings.

TECHNICAL ECONOMIST CORPORATION

40 RECTOR ST., NEW YORK, N. Y.

PAPER MACHINES

For Sale

In good condition. Immediate Delivery.

One 2 cylinder machine. 2 presses; 10 dryers 42" x 84"; one calender; reel; single drum winder; Marshall drive.

One Fourdrinier machine. Wire 56" x 50'. 2 presses; 15 dryers 48" x 94"; one calender; reel; two drum winder; Marshall drive.

By: FRANK H. DAVIS COMPANY
175 Richdale Avenue Cambridge, Mass.

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2—Iron tub Beaters, practically new. Rolls 70 x 66. Made by Emerson Mfg. Co.

1—Wood tub Beater, practically new. Roll 70 x 66. Made by Emerson Mfg. Co.

2—Dilts Beaters, iron tubs. Rolls 54 x 62. A-1 shape.

1—New Dilts iron tub Beater, roll 50 x 44.

4—Jones Washers. Iron tubs. Rolls 67 x 60. Good shape.

1—Dayton Beater and Hoist Iron tub Beater. A-1. Rolls 64" diameter, 54" face.

1—Breaker Roll 64" diameter by 54" face.

1—Downingtown Iron tub Beater with Brownell Buehler perforated back fall. Rebuilt for immediate shipment. Roll 44" x 44".

The Shartle Brothers Machine Co.

Middletown, Ohio tf.

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For Good Used Machinery

ROTARY DRYERS AND KILNS
6—4' x 30' American Process.
2—6' x 60'.
1—6' x 100'.
1—8' x 125'.

PULPER MIXERS
1—W. & P. size 17-200 gals.
Also several smaller sizes.

TUBE AND ROD MILLS
1—3' 6" x 12' Allis Chalmers.
1—4' x 16' Schmidt.
5—5' x 22' Allis Chalmers.
7—5' 6" x 22' Schmidt.
1—6' x 22' Gates.

SULPHUR BURNERS
1—3' x 8' Glens Falls.
4—4' x 16' Glens Falls.
4—4' x 20' Glens Falls.

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1—Stokes Triple Effect, 1,000 sq. ft.
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1—Swenson Triple Effect, 1,750 sq. ft.
2—Swenson Triple Effect, 3,300 sq. ft.

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3—6' x 4' Oliver.
2—6' x 6' Oliver.
2—6' x 6' Oliver, Acid Proof.
1—8' x 8' Oliver, Acid Proof.

SEND US YOUR INQUIRIES
WE BUY YOUR IDLE EQUIPMENT

CONSOLIDATED PRODUCTS COMPANY, INC.
15 PARK ROW NEW YORK, N. Y.
Barclay 0603

FOR SALE

BOARD MILL EQUIPMENT

3—800 lb. Downingtown Beaters.
2—70" Downingtown Wet Machines.
1—48" Stack Board Calenders.
1—36" Stack Board Calenders.
1—120 Ton Screw Press.
1—65" Ream Cutter.
250 H.P. and 150 H.P. Engines.

Address, Box 27-270, care Paper Trade Journal.

FOR SALE

1—72" Model 10 Cameron.

11—Dryers 48" x 110".

60" trim Black-Clawson Fourdrinier machine.

Several White cedar stuff chests, A-1 shape.

1—48"—3 cylinder machine.

1—70"—2 cylinder machine.

Several Chippers.

Four deck Beloit frames. These are modern and extra heavy.

One Ryther & Pringle Multiple Saw Slasher. Will cut 32'.

One Farrel Roll Grinder.

One No. 2 Lannoye Pulper.

One 61" Holyoke Super-Calender

The Shartle Brothers Machine Company

Middletown, Ohio tf.

FOR SALE

1—72" Hamblet Single Cutter with 24 roll back stand.
1—84" Beloit heavy duty duplex.
1—84" Black-Clawson heavy duty duplex, with duplex slitter.
1—52" Moore & White Cutter with Moore & White Layboy and Backstands.
1—48" Moore & White Cutter with Moore & White Layboy and Backstands.
1—42" Moore & White Cutter with Moore & White Layboy and Backstands.
1—60" Hamblet Cutter with 10 roll Backstands.
1—110" Moore & White Cutter with Moore & White Layboy and Backstands.
1—82" Heavy duty Hamblet Single Cutter with 24 roll Backstands.
2—58" Moore & White Single Cutters.
4—54" Moore & White Single Cutters.
6—48" Moore & White Single Cutters.
1—57" Hamblet Duplex Cutter, Heavy Duty.

The Shartle Brothers Machine Co.,
Middletown, Ohio tf.

FOR SALE

FOR SALE—One 80" Hamblet Duplex Rotary Cutter, with Lay Boy, and 12 roll Hamblet Back Stands. Practically new. Address, Box 27-376, care Paper Trade Journal. Jl-21

HELP WANTED

WANTED—For new soda pulp mill—cooks, stock runners, wet machine men. Address, Box 27-371, care Paper Trade Journal. Jl-7

WANTED—Manager for paper house long established. Address, Box 27-372, care Paper Trade Journal. Jn-30

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VERY STEADY and reliable married man available at once for situation. Can furnish best of testimonials. 8 years practical experience in news, Krafts, wrappings, imitation parchments, bank, wall papers, etc. Also holds the City and Guilds of London first-class certificate in paper technology. Address, Box 27-374, care Paper Trade Journal. Jl-14

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Many Times Some Little Classified Advertisement Placed in These Columns Usually Brings Some Very Satisfactory Results

THE PULP BUYER

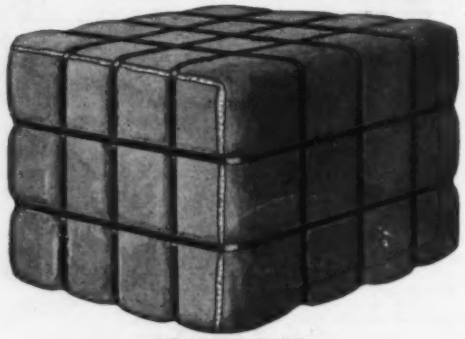
WILL TELL YOU WHY

Fidalgo System Dried and Shredded Pulp (Air Dried)

IS THE ANSWER

Units 10 to 75 ton daily capacity
Producing a compact air dry bale (suitable rail and water shipment 40-45 cu. ft. per ton) of *shredded* pulp.
Higher test than when dried on cylinder machines.

33 1/3 SAVING AT BEATER



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GENERAL ADVANTAGES

No Mechanical Pressure used until dry—upon cutting straps at Beater entire bale allowed to absorb rapidly. No surface pressure on wet pulp during drying process. Only current of warm dehydrated air, produces a product that has its surface pores wide open for ready absorption in Beater and produces a pulp testing from 10 to 30 points higher than any pulp dried in sheet form.

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LESS LABOR than any cylinder or mechanical pressure dryer.
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Pulp being dried in closed insulated compartment—FIDALGO SYSTEM produces cleaner pulp.

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Your inspection invited.

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Less than any Drying Method we know of to install.

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This— department offers you an opportunity to dispose of your surplus material, equipment and supplies.

Take— advantage of it by placing an advertisement in these columns containing a list of what you have to offer.

Good Used Cylinder Machines

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1—Black-Clawson 96" trim, 2 cylinders, 22—42" dia. dryers, 108" face, press rolls, stack of calenders and double drum winder.

TECHNICAL ECONOMIST CORPORATION
40 RECTOR ST., NEW YORK, N. Y.

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5—12 plate flat Screens.
3—Rotary Spangenburg.
1—Impco Rotary.
1—Impco Tailing.
1—Impco Knotter.

TECHNICAL ECONOMIST CORPORATION
40 Rector Street
New York, N. Y.

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1—72" single press with 36" dia., 74" face cylinder mould.
1—84" Engineering Machine Wks. single press.
1—74" Carthage.
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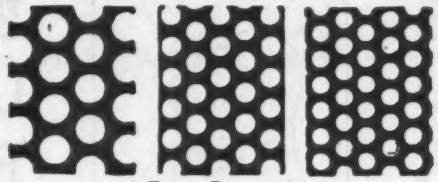

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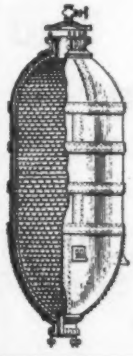

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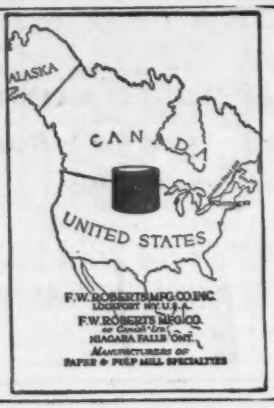

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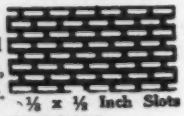

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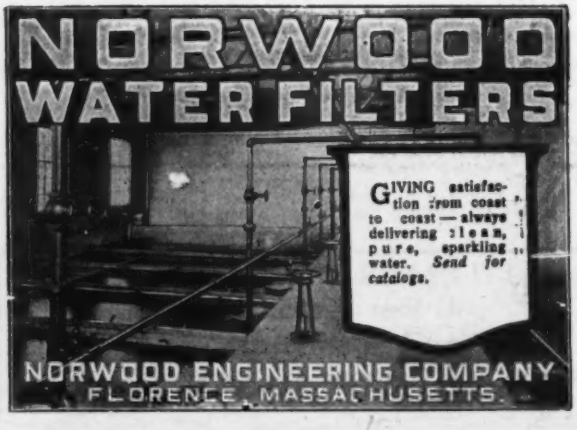
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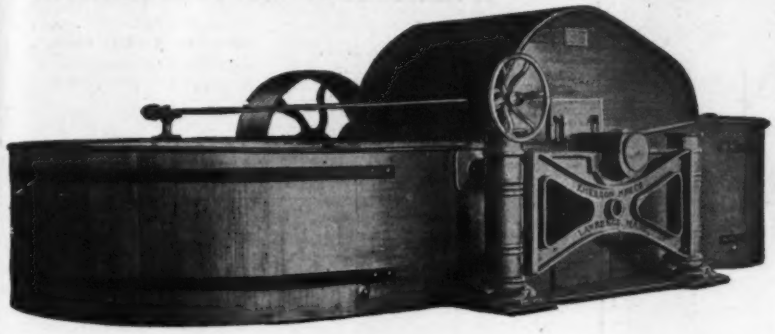

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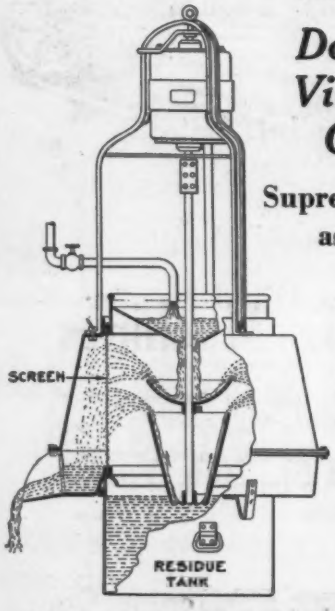

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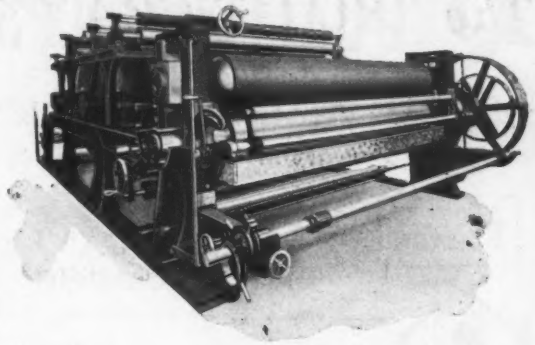

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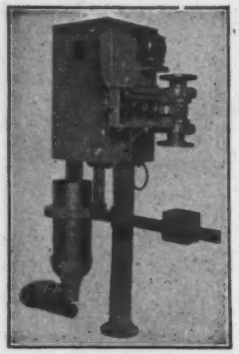

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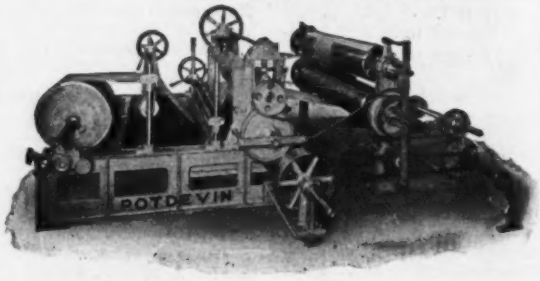

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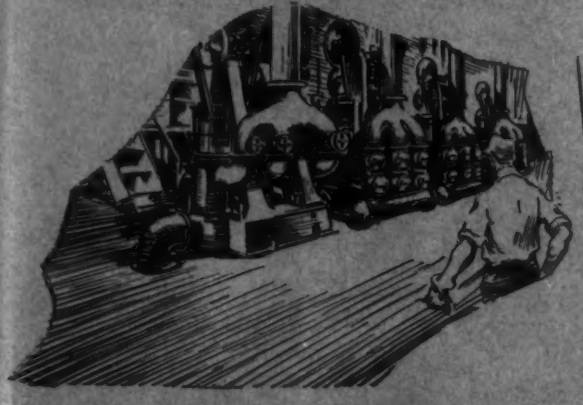

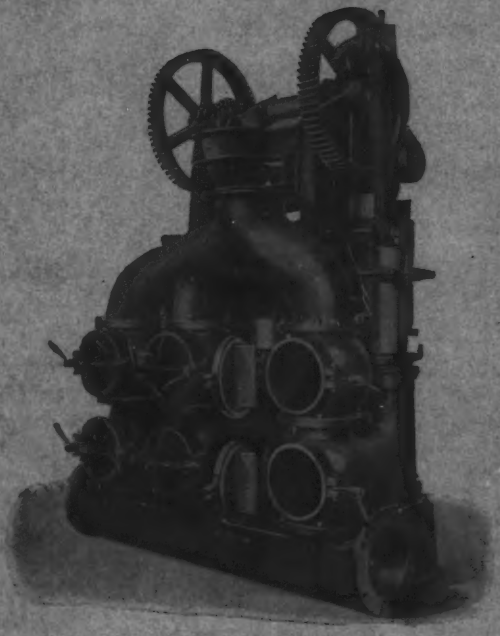

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